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- Kudrin, V. D. (with Kuzin, V. A.; Synah, V. S.; Fage, M. K.) Some nonlinear problems of mathematical chemistry and physics. (Russian) (58 #32435)
- Kulikov, I. M. See Gudović, I. S.; et al., (47 #5440)
- Kul'ko, I. P. See Kul'ko, V. F., (45 #9015)
- Kul'ko, V. F. (with Kul'ko, I. P.) A practical method of solution of partial differential equations, and its application to the solution of problems of electrical engineering. (Russian) (45 #9015)
- Kuzin, V. A. See Kudrin, V. D.; et al., (58 #32435)
- Lanin, A. I. See Buldyrev, V. S., (49 #7588)
- Lee, Edward P. Kinetic theory of a relativistic beam. (52 #12522)
- Levitan, B. M. See Babič, V. M., (58 #7745)
- Ludwig, Donald See Morawetz, C. S., (58 #29289a)
- Majda, Andrew J. (with Taylor, Michael E.) Inverse scattering problems for transparent obstacles, electromagnetic waves, and hyperbolic systems. (55 #10867)
- (with Taylor, Michael E.) The asymptotic behavior of the diffraction peak in classical scattering. (56 #9103)
- Mattei, Giulio Superfici di discontinuità in fisica dei plasmi. (English summary) (51 #2449)
- Mayné, Georges See Boulanger, Philippe, (53 #15044)
- Menezes, L. C. See Rauh, A.; et al., (56 #17580)
- Mishra, R. S. See Ram, Gulab, (58 #25346)
- Mishra, Shankar Prasad (with Sahoo, Dola Govinda) Flow engendered by the time-varying motion of a porous plate in the presence of a magnetic field. (57 #14862)
- Morawetz, C. S. (with Ludwig, Donald) The generalized Huyghens' principle for reflecting bodies. (58 #29289a)
- (with Strauss, Walter A.) Decay and scattering of solutions of a nonlinear relativistic wave equation. (46 #2239)
- Geometrical optics and the singing of whales. (58 #25364)
- Nishijima, Kazuhiko Zero mass renormalization and an identity in quantum electrodynamics. (58 #8902)
- Omel'chenko, V. T. See Kim, E. I.; et al., (58 #14426)
- Pankratova, T. F. See Babič, V. M., (50 #7826)
- Pellat, René See Raoult, Michel, (58 #25831)
- Phillips, Ralph S. A remark on the preceding paper of C. S. Morawetz and D. Ludwig. (58 #29289b)
- Popov, A. V. Transverse diffusion method in the problem of sound diffraction by a strip. (54 #4313)
- Porkolab, Miklos (with Goldman, Martin V.) Upper-hybrid solitons and oscillating-two-stream instabilities. (54 #14658)
- Ram, Gulab (with Mishra, R. S.) Unsteady flow through magnetohydrodynamic porous media. (58 #25346)
- Raoult, Michel (with Pellat, René) The stability of a self-gravitating magnetized system. (58 #25831)
- Rauch, Jeffrey B. (with Taylor, Michael E.) Electrostatic screening. (52 #3716)
- Rauh, A. (with Salinas, S. R.; Menezes, L. C.) Analytical wave functions for crystalline electrons in a magnetic field. (56 #17580)
- Renno, Pasquale Sulla stabilità asintotica in presenza di perturbazioni al contorno per una classe di moti magnetoidrodinamici. (English summary) (56 #7468)
- Rionero, Salvatore See Galdi, Giovanni Paolo, (57 #14846)
- Romano, Antonio Sulla termodinamica di un dielettrico elastico e dispersivo. (49 #11967)
- Rutelli, Giovanni Sulle equazioni integrali delle distribuzioni transitorie del potenziale della corrente nelle linee elettriche reali e la formula bilineare di Kneser. (English summary) (51 #3816 (E 56 #6303))
- Sahoo, Dola Govinda See Mishra, Shankar Prasad, (57 #14862)
- Salinas, S. R. See Rauh, A.; et al., (56 #17580)
- Samarskii, A. A. Numerical methods in plasma physics. (Russian) (57 #14946)
- Scott, Alwyn C. The application of Bäcklund transforms to physical problems. (58 #29466)
- Shen, Mei Chang (with Keller, Joseph B.) Uniform ray theory of surface, internal and acoustic wave propagation in a rotating ocean or atmosphere. (51 #4844)
- Sleeman, Brian D. Towards the validity of the geometrical theory of diffraction. (57 #6810)
- Sologub, V. G. Short wave asymptotic behavior of the solution of the problem of diffraction on a circular disc. (Russian) (47 #7231)
- Strauss, Walter A. See Morawetz, C. S., (46 #2239)
- Synah, V. S. See Kudrin, V. D.; et al., (58 #32435)
- Tanaka, Kazuo Electromagnetic fields in a linearly accelerated medium. (52 #9946)
- Taylor, Michael E. See Rauch, Jeffrey B., (52 #3716); Majda, Andrew J., (55 #10867); and Majda, Andrew J., (56 #9103)
- Tokatly, V. I. (with Kinber, B. E.) Shortwave asymptotics of axisymmetric wave packets. (Russian. English summary) (46 #526)
- Turski, Andrzej J. Mathematical problems on the electromagnetic probing of a rock formation. (Polish) (57 #8974)
- van de Ven, Alphons Adrianus Francisca ★Interaction of electromagnetic and elastic fields in solids. (54 #6617)
- Weck, Norbert Über das asymptotische Verhalten von Lösungen der Maxwellschen Gleichungen in Kegelspitzen. (51 #6195)
- Wendland, Wolfgang L. See Kleinman, Ralph E., (55 #3518)
- Wilcox, Calvin H. See Guillot, Jean-Claude, (55 #886)
- Williams, W. E. A note on Green's functions for the Helmholtz equation. (57 #16957)
- Wolfe, Peter Diffraction of plane waves by a strip; exact and asymptotic solutions. (47 #626 (E 47 #8010))
- Diffraction of a pulse by a strip. (50 #6308)
- (Wood, James S.) See Mathematical problems in the theory of wave propagation, (46 #9559)
- Wünsch, Volkmar Maxwellsche Gleichungen und Huygensches Prinzip. II. (54 #14740)
- Yoshida, Hideo See Ikeda, Minoru; et al., (57 #18622)
- Zubov, V. I. Equilibrium surfaces in a magnetic field. (Russian) (57 #14918)
- Zwanziger, Daniel Lesson from a soluble model of quantum electrodynamics. (57 #8638)
- Mathematical problems in the theory of wave propagation ★Mathematical problems in wave propagation theory. (46 #9557)
- ★Mathematical problems in wave propagation theory, Part II. (46 #9558)
- ★Mathematical problems in wave propagation theory, Part III. (46 #9559)
- Seminars in Mathematics (V. A. Steklov Math. Inst., Leningrad) See Mathematical problems in the theory of wave propagation, (46 #9557); Mathematical problems in the theory of wave propagation, (46 #9558) and Mathematical problems in the theory of wave propagation, (46 #9559)
- Wave propagation See Mathematical problems in the theory of wave propagation, (46 #9557); Mathematical problems in the theory of wave propagation, (46 #9558) and Mathematical problems in the theory of wave propagation, (46 #9559)

78.39 Finite differences and functional equations

Secondary classifications:

Fabrizio, Mauro Una teoria fenomenologica per la termodinamica del campo elettromagnetico. (45 #8138)

78.41 Approximations and expansions

Abarenkov, I. V. On the orthogonalized plane wave method. (Russian summary) 47 #2920

Agranović, M. S. Non-self-adjoint integral operators with kernels of the Green-function type, and diffraction problems related to them. 55 #4948

Andrianov, V. A. (with Sekistov, V. N.) Application of complex geometric optics in the problem of radioscopy of the atmosphere in the case of superrefraction. (Russian. English summary) 58 #14388

Anjutin, A. P. (with Orlov, Ju. I.) Uniform asymptotic behavior of a field of rectangular radio pulses in a magnetoactive plasma. (Russian. English summary) 56 #17508

Artemov, V. I. (with Sinkevič, O. A.) On the construction of plane stationary solutions of equations for nonequilibrium magnetized plasma. 57 #8475

Bahar, E. Excitation of horizontally polarized waves in critical-coupling regions where the permittivity gradient approaches zero—full wave solutions. 54 #9358

Bennett, J. A. A new derivation of the W. K. B. solution for the coupled equations of

- radio waves in the ionosphere. **55** #9725
- Berry, M. V.** Cusped rainbows and incoherence effects in the rippling-mirror model for 'particle scattering from surfaces. **58** #8816
- Focusing and twinkling: critical exponents from catastrophes in non-Gaussian random short waves. **58** #8817
- Boersma, J.** Diffraction by two parallel half-planes. **52** #9820
- Cade, R.** A perturbation method for solving torus problems in electrostatics. **58** #14389
- Cekirge, H. M.** See **Rogers, Colin**, **56** #10449
- Chen, Chin Long J.** See **Rudduck, Roger C.**, **55** #7123
- Cole, Julian D.** See **Peskoff, A.**; et al., **52** #12554
- Corones, James P.** Bremmer series that correct parabolic approximations. **51** #4859
- Das, K. P.** (with **Sihi, S.**) Modulational instability of elliptically polarized transverse electromagnetic wave in a cold plasma. **57** #8476
- Davidon, William C.** Time-dependent multipole analysis. **50** #15609
- Davis, A. M. J.** (with **Leppington, F. G.**) The scattering of electromagnetic surface waves by circular or elliptic cylinders. **55** #4949
- Debart, M.-H.** Propagation d'une onde dans un milieu aléatoire stationnaire: nouvelle approche. (English summary) **55** #9726
- Delhalle, Joseph** See **Piela, Lucjan**, **58** #14394
- Deschamps, Georges A.** See **Lee, Shung Wu**, **52** #12553
- Ehrlich, Matthias** Iterative Berechnung des elektrostatischen Potentials in der Umgebung offener Flächen. (English and Russian summaries) **54** #9359
- Eisenberg, R. S.** See **Peskoff, A.**; et al., **52** #12554 and **Peskoff, A.**, **56** #1955
- Eremin, Ju. A.** (with **Svešnikov, A. G.**) The study of scalar diffraction by a locally inhomogeneous body by means of the projection method. (Russian) **55** #7122
- Fencenko, V. M.** Asymptotic behavior of an electromagnetic field in a medium with a large number of fine dielectric impurities. (Russian. English summary) **54** #1885
- Filippov, V. B.** Shortwave asymptotics of a flow in the problem of diffraction by non-plane screens. (Russian) **54** #4343
- Fusco, Domenico** Su una soluzione asintotica delle equazioni di Maxwell nei mezzi ferromagnetici. (English summary) **57** #2197
- Hozioskii, S. A.** See **Popov, A. V.**, **56** #7497
- Ivanov, V. I.** Computation of corrections for geometric optics. I. Scalar problem. (Russian) **54** #4344
- Computation of corrections for geometric optics. II. The electromagnetic problem. (Russian) **54** #4345
- Computation of corrections for geometric optics. III. The dynamic problem of elasticity theory. (Russian) **54** #4346
- Jain, D. L.** See **Lal, Bansi**, **58** #14392
- Jakubov, V. P.** See **Ponomarev, G. A.**, **57** #2200
- Jones, D. S.** Double knife-edge diffraction and ray theory. **49** #6785
- Karp, Samuel N.** (with **Zitron, N. R.**) A plane wave expansion theorem for cylindrically radiated fields. **51** #12138
- Kintner, Eric C.** An analytic recurrence procedure for computing the cross-multiplication coefficients in an analytic OTF method. **56** #14150
- Kiselev, A. P.** Focusing of the WKB-solutions of the equation $[\Delta + k^2 n^2(x)]u = 0$, $k \rightarrow \infty$. (Russian) **54** #4347
- Electromagnetic field near a focus. (Russian. English summary) **58** #3978
- Kovalenko, A. N.** Natural waves of microstrip line. (Russian. English summary) **58** #14391
- Kurosaka, M.** Cumulative nonlinear distortion of an acoustic wave propagating through non-uniform flow. **57** #2198
- Lachambre, J.-L.** See **Otis, G.**; et al., **57** #18499
- Lal, Bansi** (with **Jain, D. L.**) An electrostatic problem of two staggered parallel strips in a bounded space. **58** #14392
- Lavigne, P.** See **Otis, G.**; et al., **57** #18499
- Lee, Shung Wu** (with **Deschamps, Georges A.**) A uniform asymptotic theory of electromagnetic diffraction by a curved wedge. **52** #12553
- Comparison of uniform asymptotic theory and Ufimtsev's theory of electromagnetic edge diffraction. **56** #7496
- Path integrals for solving some electromagnetic edge diffraction problems. **58** #14393
- Leppington, F. G.** See **Davis, A. M. J.**, **55** #4949
- Lewis, J. A.** See **Morrison, J. A.**, **54** #4348
- Lit, J. W. Y.** See **Otis, G.**; et al., **57** #18499
- Makarov, G. I.** (with **Tihomirov, N. P.**) The dynamics of the eigenvalues in the problem of the diffraction of radiowaves by an impedance sphere. (Russian) **58** #19839
- Milant'ev, V. P.** Asymptotic theory of the motion of a charged particle under resonance conditions. (Russian) **56** #17509
- Millar, R. F.** The Rayleigh hypothesis and a related least-squares solution to scattering problems for periodic surfaces and other scatterers. **48** #10321
- Mil'rud, E. M.** The diffraction of a plane wave by an impedance half-plane. (Russian) **56** #14151
- Minelli, T. A.** (with **Pusterla, M.**) A proposal for a nonperturbative analytical approach in plasmas. **57** #14930
- Morrison, J. A.** (with **Lewis, J. A.**) Charge singularity at the corner of a flat plate. **54** #4348
- Charge singularity at the vertex of a slender cone of general cross-section. **57** #14931
- Naida, O. N.** Uniform geometric optics approximation of linear systems along rays of variable multiplicity. (Russian. English summary) **57** #2199
- Nussenzveig, H. M.** High-frequency scattering by a transparent sphere. I. Direct reflection and transmission. **52** #7320
- High-frequency scattering by a transparent sphere. II. Theory of the rainbow and the glory. **52** #7321
- Orlov, Ju. I.** Uniform asymptotic behavior of the field of a boundary wave that is emitted by an edge of a curvilinear surface. (Russian) **56** #14152
- Modification of the geometrical theory of the diffraction of waves in the vicinity of the caustic of the boundary wave. **56** #14153
- See also **Anjutin, A. P.**, **56** #17508
- Otis, G.** (with **Lachambre, J.-L.**; **Lit, J. W. Y.**; **Lavigne, P.**) Diffracted waves in the shadow boundary region. **57** #18499
- Peskoff, A.** (with **Eisenberg, R. S.**) The time-dependent potential in a spherical cell using matched asymptotic expansions. **56** #1955
- (with **Eisenberg, R. S.**; **Cole, Julian D.**) Matched asymptotic expansions of the Green's function for the electric potential in an infinite cylindrical cell. **52** #12554
- Piela, Lucjan** (with **Delhalle, Joseph**) Développement multipolaire de l'opérateur d'interaction coulombienne et dépendance du choix du système d'axes. (English summary) **58** #14394
- Pogorelov, V. I.** The limits of applicability of the radial approximation in computations of short-wave radio tracings. (Russian. English summary) **58** #14395
- Ponomarev, G. A.** (with **Jakubov, V. P.**) The geometric optics approximation in the problem of the scattering of a wave by an uneven surface. (Russian. English summary) **57** #2200
- Popov, A. V.** Shortwave asymptotic behavior of normal waves in a locally stratified medium. (Russian) **55** #9727
- (with **Hozioskii, S. A.**) A generalization of the parabolic equation of diffraction theory. (Russian) **56** #7497
- Pusterla, M.** See **Minelli, T. A.**, **57** #14930
- Rogers, Colin** (with **Cekirge, H. M.**) Non-linear dielectrics. **56** #10449
- Rudduck, Roger C.** (with **Chen, Chin Long J.**) New plane wave spectrum formulations for the near-fields of circular and strip apertures. **55** #7123
- Šatrov, A. D.** Expansions of fields in open waveguides and resonators. **50** #9178
- Schep, T. J.** Series solutions and the adiabatic invariant of the Helmholtz equation. **53** #12226
- Sekistov, V. N.** See **Andrianov, V. A.**, **58** #14388
- Sihi, S.** See **Das, K. P.**, **57** #8476
- Sinkevič, O. A.** See **Artemov, V. I.**, **57** #8475
- Svešnikov, A. G.** See **Eremin, Ju. A.**, **55** #7122
- Tihomirov, N. P.** See **Makarov, G. I.**, **58** #19839
- Vaisleib, Ju. V.** Diffraction of electromagnetic waves by a jump-like narrowing of the transverse section of a circular waveguide. (Russian. English summary) **55** #11811
- van Weert, Ch. G.** Relativistic treatment of multipole radiation from an extended charge-current distribution. I. Asymptotic properties of the electromagnetic field. **52** #16290
- Wolfe, Peter** Diffraction of plane waves by a semicircular strip. **52** #12555
- Zitron, N. R.** See **Karp, Samuel N.**, **51** #12138

Secondary classifications:

- Anile, Angelo Marcello** Geometrical optics in general relativity: a study of the higher order corrections. (53 #4871)
- Buldyrev, V. S.** Field of a point source in a wave guide. (Russian) (45 #6270)
- Leont'ev, E. A.** The short wave asymptotic behavior of the solution of the problem of diffraction on a convex body. I, II, III. (Russian. English summary) (47 #6198)
- Lüneburg, E.** (with **Westpfahl, K.**) Diffraction theory by means of singular integral equations. VII. Uniform high-frequency asymptotics for the diffraction of plane waves by a slit. (53 #7234)
- Meierova, R. S.** Short-wave asymptotics of the solution of a certain diffraction problem. (Russian. Latvian and English summaries) (47 #1383)
- Westpfahl, K.** See **Lüneburg, E.**, (53 #7234)

78.42 Fourier analysis

- De Santis, P.** (with **Palma, C.**) Degrees of freedom of aberrated images. (French and German summaries) **56** #14154
- Domke, H.** The expansion of scattering matrices for an isotropic medium in generalized spherical functions. **49** #11962
- Klassen, V. I.** Estimation of certain typical trigonometric sums encountered in radiophysics. (Russian. English summary) **57** #2201
- Kravčenko, V. F.** (with **Ratner, V. I.**) On the theory of the propagation of electromagnetic waves in irregular cylindrical wave guides. (Russian) **55** #7124
- Lukš, A.** On the moment problem in optics. **57** #8477
- Palma, C.** See **De Santis, P.**, **56** #14154
- Prastein, S. Matthew** Suppression of Cerenkov radiation. **50** #1639
- Ratner, V. I.** See **Kravčenko, V. F.**, **55** #7124
- Sheets, Michael R.** See **Sternberg, Robert L.**; et al., **55** #7125
- Shigematsu, Abraham** See **Sternberg, Robert L.**; et al., **55** #7125
- Sternberg, Alice L.** See **Sternberg, Robert L.**; et al., **55** #7125
- Sternberg, Helen M.** See **Sternberg, Robert L.**; et al., **55** #7125
- Sternberg, Robert L.** (with **Sheets, Michael R.**; **Sternberg, Helen M.**; **Shigematsu, Abraham**; **Sternberg, Alice L.**) Multiple Fourier analysis in rectifier problems. II. **55** #7125
- Tihonov, N. A.** The determination of certain nonlinear characteristics of an anisotropic medium. (Russian) **47** #9958

Secondary classifications:

- Roblin, G.** Propriétés et conséquences de la modulation temporelle du signal optique en métrologie optique. (English and German summaries) (48 #13440)

78.44 Integral transforms, operational calculus

- Abo-Zena, A. M.** (with **Beam, R. E.**) Exterior electromagnetic boundary value problem of a wedge. (French, German, Italian and Russian summaries) **58** #19840
- Aoki, Kazuo** (with **Tanaka, Tatsuo**) Diffraction of a plane wave by two parallel conducting plates. **58** #32419
- Astahov, V. I.** Inversion of the Laplace operator on closed shells by the method of integral equations. (Russian) **56** #17510
- Bahar, E.** Generalized Fourier transform for stratified media. (French summary) **53** #12227

- Radio wave propagation in stratified media with nonuniform boundaries and varying electromagnetic parameters: full wave analysis. (French summary) 53 #12228
- Bahareva, N. P.** Waves of "continuous spectrum" type in cylindrical transmission lines. (Russian. English summary) 56 #17511
- Baleanu, C.** Effects of collisions on third order temporal wave echo in plasma. II. 57 #14932a
- Effects of collisions on third-order temporal wave echo in plasma. III. 57 #14932b
- Beam, R. E.** See **Abo-Zena, A. M.**, 58 #19840
- Chakrabarti, Alok Nath** Diffraction by a uni-directionally conducting strip. 57 #11366
- Il'inskii, A. S.** A plane problem of excitation of a transparent periodic structure by a point source. (Russian) 58 #8818
- Puhov, G. È.** ★Преобразования Тейлора и их применение в электротехнике и электронике. (Russian) (Taylor transforms and their application in electrical engineering and electronics) 58 #19841
- Sleeman, Brian D.** Integral representations associated with high-frequency non-symmetric scattering by prolate spheroids. 55 #9728
- Szabo, Thomas L.** Generalized Fourier transform diffraction theory for parabolically anisotropic media. 58 #14396
- Tanaka, Tatsuo** See **Aoki, Kazuo**, 58 #32419
- Ungar, Abraham** An electromagnetic progressing wave representation for the field of a uniformly moving point charge. 57 #14933
- Vest, C. M.** Formation of images from projections: Radon and Abel transforms. 50 #3779
- Watanabe, Kazumi** Transient response of an acoustic half-space to a rotating point load. 57 #11367
- Wolf, E.** The radiant intensity from planar sources of any state of coherence. 58 #25407
- Secondary classifications:
- Lalor, Éamon** The angular spectrum representation of electromagnetic fields in crystals. I. Uniaxial crystals. (45 #9593a)
- The angular spectrum representation of electromagnetic fields in crystals. II. Biaxial crystals. (45 #9593b)
- An analytical approach to the theory of internal conical refraction. (45 #9594)
- ### 78.45 Integral equations
- Agarwal, G. S.** Integral equation treatment of scattering from rough surfaces. 53 #15109
- Ageev, V. N.** A method of determining the ionization profile from the results of oblique probing of the ionosphere on a fixed frequency. (Russian) 56 #17512
- Ahn, Saeyoung** See **Szu, H. Harold; et al.**, 55 #4947
- Ahner, John F.** The exterior Dirichlet problem for the Helmholtz equation. 54 #6696
- Aichelburg, P. C.** (with **Beig, R.**) Radiation damping as an initial value problem. 54 #9360
- Alvarez-Estrada, R. F.** (with **Calvo, Manuel**) Diffraction of a classical electromagnetic wave by a thin periodic slab: a rigorous approach. 58 #25408
- Appelt, Wolfgang** ★Numerische Behandlung der singulären Integralgleichung zur Bestimmung der Ladungsdichte und Feldstärke bei elektronen-optischen Instrumenten. 50 #1640
- Astahov, V. I.** Motion of a conducting strip in a magnetic field. I. (Russian) 57 #4841
- Bahrah, L. D.** (with **Džrbašjan, M. M.**; **Litvinov, O. S.**) Solution of the inverse electrodynamic problem for a star-like system of segments. (Russian) 53 #12229
- Beig, R.** See **Aichelburg, P. C.**, 54 #9360
- Belinskii, B. P.** Integral equations of stationary problems of short wave diffraction by barriers of segment type. (Russian) 48 #10322
- Bellman, Richard** (with **Vasudevan, R.**; **Farah, Jose**) A novel approach to the study of reflection functions for finite isotropically scattering atmospheres bounded below by specular and Lambert law reflectors. 49 #11963
- Benson, Jacob** Analysis of effects of misalignment on transmission properties of beam waveguide. 50 #3780
- van den Berg, P. M.** Diffraction theory of a reflection grating. 47 #1385
- Smith-Purcell radiation from a line charge moving parallel to a reflection grating. 49 #6786
- Radiation from a point charge moving through a circular aperture in a screen. 52 #16291
- Bleistein, Norman** (with **Cohen, Jack K.**) Nonuniqueness in the inverse source problem in acoustics and electromagnetics. 55 #11812
- Bloom, Clifford O.** On the validity of the geometrical theory of diffraction by star-shaped cylinders. 47 #6201
- Bondarenko, P. S.** (with **Trandaš, M. M.**) The formation of closed trajectories of relativistic electrons by plane electrostatic fields. (Ukrainian. English and Russian summaries) 50 #3781
- Bouix, Maurice** L'équation intégrale de Kirchhoff pour le rayonnement électromagnétique: obstacles, antennes, arêtes. 56 #14155
- Une équation intégrale pour le champ électromagnétique. (English summary) 58 #3979
- Modèle d'antenne cylindrique de révolution finie. (English summary) 58 #3980
- Bremmer, H.** See **van der Woude, P.**, 51 #9667
- Burton, A. J.** Numerical solution of scalar diffraction problems. 57 #14934
- Butakova, S. V.** See **Evstropov, G. A.**, 45 #9596
- Calvo, Manuel** (with **Duran, A.**) On the rigorous approximation methods for electromagnetic-wave scattering by fixed obstacles. (Italian and Russian summaries) 52 #16292
- (with **Duran, A.**) Fredholm's method for multiple scattering of electromagnetic waves by fixed obstacles. (Italian and Russian summaries) 58 #8819
- See also **Alvarez-Estrada, R. F.**, 58 #25408
- Carroll, C. E.** See **Szu, H. Harold; et al.**, 55 #4947
- Chang, Shih Chih** The distribution of free electrical charge on the surface of a conducting body—the Robin problem. 48 #3371
- Clements, D. L.** (with **Love, Eric Russell**) Potential problems involving an annulus. 49 #10228
- Cohen, Jack K.** See **Bleistein, Norman**, 55 #11812
- Dmitriev, V. I.** See **Tihonov, A. N.**, 45 #9598
- Drăganu, Mircea** On the solution of an integro-differential equation which occurs in the theory of inhomogeneous semiconductors and plasmas. 52 #7326
- Duffin, Richard J.** (with **McWhirter, J. H.**) An integral equation formulation of Maxwell's equations. 51 #2476
- Duran, A.** See **Calvo, Manuel**, 52 #16292 and **Calvo, Manuel**, 58 #8819
- Dwivedi, A. P.** (with **Lal, Mange**) Certain mixed boundary value problem in electrostatics. 49 #4440
- Džrbašjan, M. M.** See **Bahrah, L. D.**; et al., 53 #12229
- Ebersoldt, Franz** Über positive Eigenelemente von Transportoperatoren in gewissen Banachräumen. 49 #8512
- Engibarjan, N. B.** (with **Mnacakanjan, M. A.**) Linear transfer problems. (Russian) 50 #9179
- Evstropov, G. A.** (with **Butakova, S. V.**) On the calculation of a chink bridge and of the turn by 180° in a rectangular wave guide. (Russian) 45 #9596
- Facq, P.** See **Vampouille, M.**, 50 #6325
- Farah, Jose** See **Bellman, Richard; et al.**, 49 #11963
- Fymat, Alain L.** Remote monitoring of environmental particulate pollution: a problem in inversion of first-kind integral equations. 52 #9821
- Gasanov, F. M.** An application of integral equations to the solution of problems of diffraction by transparent periodic structures. (Russian. Azerbaijani and English summaries) 56 #1956
- Gerber, R. B.** (with **Karplus, Martin**) On the determination of the phases of electromagnetic scattering amplitudes from experimental data. 52 #7327
- Goel, G. C.** (with **Jain, D. L.**) A note on electrostatic problems involving two strips. 58 #32420
- Gupta, H. L.** (with **Rusia, K. C.**) Application of triple integral equations in some asymmetric mixed boundary value problems of an electrified annular disc situated inside a co-axial infinite hollow cylinder. 52 #4826
- Gupta, P. M.** See **Singh, B. M.**, 51 #14756
- Gurbatov, S. N.** (with **Saičev, A. I.**) The diffusion of wave packets in a medium with space-time inhomogeneities. (Russian. English summary) 56 #17513
- Havelka, Bedřich** See **Miller, Miroslav**, 58 #8821
- Hernández S., Juan L.** Integral equations in linear circuits. (Spanish) 55 #7126
- Hose, Marin** (with **Rival, Ivan**) Diffraction of electromagnetic waves by several apertures. The plane case. (Russian) 45 #9597
- Hurd, R. A.** The Wiener-Hopf-Hilbert method for diffraction problems. (French summary) 54 #1886
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- See also **Przeździecki, S.**, 56 #14157
- İdemen, Mithat** On the functional equation related to the three-part mixed boundary value problems. 51 #2477
- Irzinski, E. P.** The input admittance of a TEM excited annular slot antenna. 53 #7235
- Itoh, Takehiro** (with **Mitra, Raj**) A method for solving boundary value problems associated with a class of doubly modified Wiener-Hopf structures. 46 #2998
- Ivanov, V. V.** Transfer of resonance radiation in purely scattering media. I. Semi-infinite medium. (Russian. English summary) 54 #4349
- Transfer of resonance radiation in purely scattering media. II. Optically thick layer. (Russian. English summary) 54 #4350
- Jain, D. L.** Electromagnetic diffraction by a thin conducting circular disk placed at the plane interface of two different media. 47 #2921
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- Kalaba, Robert E.** (with **Zagustin, Elena**) An initial value method for an inverse problem in wave propagation. 49 #1930
- Kanwal, Ram P.** (with **Sachdeva, B. K.**) Approximate solutions of certain integral equations for the diffraction by two strips. (French summary) 47 #9959
- Karp, Samuel N.** See **Morgan, Richard C.**, 53 #4749
- Karplus, Martin** See **Gerber, R. B.**, 52 #7327
- Kashyap, S. C.** Diffraction characteristics of a slit formed by two staggered parallel planes. 50 #9180
- Kho, T. H.** (with **Sen, K. K.**) Non-coherent scattering in transfer problems in spherical shell media. III. A moving medium. 51 #9752
- Kirillov, V. H.** Electric field in a MHD channel of rectangular cross section in the presence of the Hall effect. 48 #10323
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- Ko, Wai Lee** (with **Mitra, Raj**) A new approach based on a combination of integral equation and asymptotic techniques for solving electromagnetic scattering problems. 58 #8820
- Kraft, Richard** Uniqueness and existence for the integral equation of interreflections. 49 #8513
- Krasil'nikov, V. N.** See **Klass, V. A.**, 57 #8478
- Kudrewicz, Halina** Integral equations of periodic loads and currents in a nonlinear transmission channel. (Polish) 55 #13957
- Kul'ko, I. P.** See **Kul'ko, V. F.**, 58 #32421
- Kul'ko, V. F.** (with **Kul'ko, I. P.**) An electrostatic field of a conducting body of a complex form with assigned jump in potential on its surface. (Russian) 58 #32421
- Kuz'mina, M. G.** General functional properties of the polarized radiation transfer equation. (Russian) 57 #18500

- The symmetry of the solutions of problems in the theory of polarized radiation transfer in media with two-dimensional geometry. (Russian) **58** #19842
- Lal, Mange** See **Dwivedi, A. P.**, **49** #4440
- Landau, Henry J.** The notion of approximate eigenvalues applied to an integral equation of laser theory. **56** #4433
- Latz, Norbert** Electromagnetic diffraction by imperfectly dielectric wedges. **49** #6787
Eine Wiener-Hopf-Gleichung zum Transmissionsproblem der Maxwellschen Gleichungen. **53** #9882
- Lerche, I.** On the transport properties of charged particles in one dimension in random electric fields. **48** #7790
- Lister, G. G.** (with **Troyon, F. S.**) On the stability of a system in which one parameter oscillates sinusoidally with small amplitude. (French summary) **49** #10229
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- Ljudkevič, I. V.** (with **Jarema, L. L.**) An application of the regularization method to the solution of a problem of analysis in electron optics. (Russian. English summary) **52** #2416
- Lo Surdo, Camillo** Hydromagnetic asymptotic equilibria with vacuum, closed-line dominant B and parallel dominant J (Italian and Russian summaries) **54** #9361
- Love, Eric Russell** See **Clements, D. L.**, **49** #10228
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- McWhirter, J. H.** See **Duffin, Richard J.**, **51** #2476
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- Mitra, Raj** See **Itoh, Takehiro**, **46** #2998 and **Ko, Wai Lee**, **58** #8820
- Mnacakanjan, M. A.** See **Engibarjan, N. B.**, **50** #9179
- Mokin, Ju. I.** Two models for the stationary motion of charged particles in a vacuum diode. (Russian) **58** #19844
- Molotkov, V. V.** (with **Urazakov, È. I.**) The exact computation of the excitation of certain systems of plane wave guides. (Russian) **56** #14156
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- Morozova, I. D.** Determination of the true values of the parameters of the isolated lines of the Raman effect from the observed values. (Russian) **51** #12141
- Murphy, Joseph E.** Characteristic wave numbers for simple source formulations of acoustic radiation and diffraction problems. **58** #14397
- Nagirner, D. I.** Scattering of resonance radiation in a sphere. (Russian. English summary) **57** #2202
- Narbut, V. P.** (with **Nikolaev, S. I.**) The calculation of the uniform asymptotic behavior of the boundary wave in the diffraction of a semishadow field on the half-plane. (Russian. English summary) **58** #19845
- Nesmejanova, N. I.** See **Zaharov, E. V.**, **56** #14158
- Nikolaev, S. I.** See **Narbut, V. P.**, **58** #19845
- Nixdorff, K.** Eine neue Formulierung der Bewegungsgleichung von Abraham-Lorentz. (English summary) **50** #3782
- Perry, William L.** On the Bojarski-Lewis inverse scattering method. **52** #7328
- Popov, M. M.** Diffraction losses of a confocal resonator with mirrors of arbitrary shape. (Russian) **52** #2417 (E 53 #9883)
A supplement to the paper "Diffraction losses of a confocal resonator with mirrors of arbitrary shape" (Dokl. Akad. Nauk SSSR **219** (1974), 63-66). (Russian) **53** #9883
- Przeździecki, S.** (with **Hurd, R. A.**) Diffraction by a half-plane perpendicular to the distinguished axis of a general gyrotropic medium. (French summary) **56** #14157
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- Rawlins, A. D.** Diffraction by a dielectric wedge. **56** #10450
- Rival, Ivan** See **Hose, Marin**, **45** #9597
- Rusia, K. C.** See **Gupta, H. L.**, **52** #4826
- Sachdeva, B. K.** See **Kanwal, Ram P.**, **47** #9959
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- Savenko, P. A.** See **Voitovič, N. N.**, **54** #11986
- Sen, K. K.** See **Kho, T. H.**, **51** #9752
- Senior, T. B. A.** Low-frequency scattering by a dielectric body. **54** #4351
- Šestopalov, V. P.** See **Veliev, È. I.**; et al., **54** #4352
- Singh, B. M.** On a mixed boundary value problem in electrostatics. **45** #8142
(with **Gupta, P. M.**) Electrostatic field of two parallel coplanar condensers. **51** #14756
- Sologub, V. G.** Diffraction of a plane wave by a grating of parallel strips in the case of short wavelengths. (Russian) **48** #3372
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- Spence, D. A.** Asymptotic solutions of the Fredholm equations for the charged annular disc. **55** #4950
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- Szalek, Marek A.** A method for reducing electromagnetic problems to integral equations of the second kind. (Polish) **57** #11368
A method of error estimation for certain waveguide problems. (Polish) **57** #11369
- Szu, H. Harold** (with **Carroll, C. E.**; **Ahn, Saeyoung**) ★ Reformulation of the plasma inverse scattering problem. **55** #4947
- Tihonov, A. N.** (with **Dmitriev, V. I.**) The methods of solution of the inverse problem in the theory of antennas. (Russian) **45** #9598
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- Trandaš, M. M.** See **Bondarenko, P. S.**, **50** #3781
- Troyon, F. S.** See **Lister, G. G.**, **49** #10229
- Urazakov, È. I.** See **Molotkov, V. V.**, **56** #14156
- Vampouille, M.** (with **Facq, P.**) Diffraction par un système coin-miroir parfaitement conducteur. (English and German summaries) **50** #6325
- Vasil'ev, E. N.** (with **Materikova, L. B.**) Perturbation of a multilayer dielectric body of rotation of arbitrary shape. (Russian. English summary) **57** #8479
- Vasudevan, R.** See **Bellman, Richard**; et al., **49** #11963
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- Voitovič, N. N.** (with **Savenko, P. A.**) Branching of solutions of the antenna synthesis problem based on a specified amplitude radiation pattern. **54** #11986
- Wilcox, Ralph** Wave propagation through longitudinally and transversally inhomogeneous slabs. I. **48** #7791
- Wolfe, Peter** Diffraction of plane waves by a hard strip. **55** #13958
- van der Woude, P.** (with **Bremmer, H.**) Expansions applicable to a nonstationary scattering medium. **51** #9667
- Zagustin, Elena** See **Kalaba, Robert E.**, **49** #1930
- Zaharov, E. V.** (with **Nesmejanova, N. I.**) A method for calculating an axially symmetric electromagnetic field in problems of core-mining in inhomogeneous media. (Russian) **56** #14158

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- Arsen'ev, A. A.** Theorems on the existence of a solution of the Cauchy problem for Vlasov's system of equations. (Russian) (**58** #23179)
- Boyd, W. G. C.** High-frequency scattering in a certain stratified medium. The two-part problem. (**53** #4744)
- Cochran, James Alan** (with **Hinds, Erol W.**) Eigensystems associated with the complex-symmetric kernels of laser theory. (**51** #2315)
- Darbinjan, R. A.** See **Marčuk, G. I.**; et al., (**58** #14993)
- Elepov, B. S.** See **Marčuk, G. I.**; et al., (**58** #14993)
- Hinds, Erol W.** See **Cochran, James Alan**, (**51** #2315)
- Jain, D. L.** See **Vaid, B. K.**, (**49** #5750)
- Kalaba, Robert E.** (with **Scott, Melvin R.**) An initial-value method for integral operators. IV. Complex-valued kernels of Laser theory. (**57** #14545)
- Kargin, B. A.** See **Marčuk, G. I.**; et al., (**58** #14993)
- Marčuk, G. I.** (with **Mihailov, G. A.**; **Nazaraliev, M. A.**; **Darbinjan, R. A.**; **Kargin, B. A.**; **Elepov, B. S.**) ★ Метод Монте-Карло в атмосферной оптике. (Russian) [The Monte Carlo method in atmospheric optics] (**58** #14993)
- Mihailov, G. A.** See **Marčuk, G. I.**; et al., (**58** #14993)
- Minin, I. N.** Radiation transfer in nonstationary media. (Russian. English summary) (**45** #9632)
- Nazaraliev, M. A.** See **Marčuk, G. I.**; et al., (**58** #14993)
- Scott, Melvin R.** See **Kalaba, Robert E.**, (**57** #14545)
- Singh, B. M.** Quadruple trigonometrical integral equations and their application to electrostatics. (**55** #3711)
- Syros, C.** Anisotropic scattering Boltzmann distributions and structural properties. (Greek summary) (**50** #14132)
- Vaid, B. K.** (with **Jain, D. L.**) An integral equation technique. (**49** #5750)
- Zaharov, E. V.** Uniqueness and existence of the solutions of the integral equations of the electrodynamics of inhomogeneous media. (Russian) (See **RŽMat** **1977** #6 B479)

78.46 Functional analysis

- Ciric, Ion R.** See **Rădulet, Remus**, **49** #10262
- Fabrizio, Mauro** Convessità dei potenziali termodinamici nell'elettromagnetismo ereditario. (French summary) **51** #2478
- Leopold, Hans-Gerd** Die Cauchyaufrage für die Maxwellschen Gleichungen in Distributionen. **57** #11370
- Lim, Chee Seng** Axial radiation reception. II. **55** #7127
- Mitra, Raj** See **Schaubert, Daniel H.**, **55** #13959
- Montgomery, W. D.** Diffraction by perfectly conducting plane screens. (Italian summary) **46** #4864
General refraction and power transmission. (Italian and Russian summaries) **50** #11997
- Picard, Rainer** Ein Randwertproblem in der Theorie kraftfreier Magnetfelder. (English summary) **54** #11987
- Rădulet, Remus** (with **Ciric, Ion R.**) Generalized functions in the theory of fields. **49** #10262
- Sabaev, Š.** Solvability of certain nonstationary boundary value problems of electrodynamics and of magnetohydrodynamics in the spaces $W_{p,2}^{2,1}(Q_T)$, $p > 1$, and $C_{\alpha,1+\alpha/2}^{2,1}(Q_T)$. (Russian) **57** #14935
- Schaubert, Daniel H.** (with **Mitra, Raj**) A spectral domain method for remotely probing stratified media. **55** #13959
- Temam, Roger** Détermination de la configuration d'équilibre d'un plasma. **58** #32422
- Zav'jalov, B. I.** "Quasiasymptotic behavior" of generalized functions, and self-simulation of electromagnetic form factors. (Russian. English summary) **57** #8480

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- McNamara, Brendan** Super-convergent adiabatic invariants with resonant denominators by Lie transforms. (**58** #25678)

78.47 Operator theory

- Agranovič, M. S.** Non-self-adjoint operators in certain scalar problems of diffraction at a smooth closed surface. **56** #7498

- Alekseev, V. G. Empirical spectral analysis of Gaussian homogeneous and isotropic random fields. (Russian. English summary) **47** #9795
- Anderson, P. W. Local moments and localized states. (Not reviewed)
- Bart, George R. (with Fenster, Stanley) Free field theories of spin-mass trajectories and quantum electrodynamics in the null plane. **56** #14159
- Bonč-Brujevič, V. L. A Coulomb slit in a disordered semiconductor. (Russian) **56** #17514
- Case, D. A. (with McClelland, G. M.; Herschbach, D. R.) Angular momentum polarization in molecular collisions: classical and quantum theory for measurements using resonance fluorescence. **57** #11371
- Čečkin, A. V. The mathematical theory of radiation. (Russian) **58** #3981
- Dicke, Robert H. Operator algebra and the stationary states of stellar magnetic fields. **58** #14398
- El'kin, B. S. An operator complex in the problem of the transmission of waves in an inhomogeneous wave guide. (Russian) **53** #12230
- Fenster, Stanley See Bart, George R., **56** #14159
- Fung, P. C. W. (with Ko, K. C. C.) Non-linear scattering probability of longitudinal plasma waves in a magnetoactive plasma system. **56** #17515
- Garionov, K. P. Invariance of the energy functions of linear passive two-terminal networks with respect to equivalent transformations. (Russian. English summary) **57** #4842
- Golubeva, Z. N. Some scalar diffraction problems and their related non-self-conjugate operators. **58** #3982
- Herschbach, D. R. See Case, D. A.; et al., **57** #11371
- Ko, K. C. C. See Fung, P. C. W., **56** #17515
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- Landau, Henry J. Loss in unstable resonators. **54** #11988
- Lax, Melvin D. See Valenti, C. F., **57** #14937
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- Makarov, G. I. (with Ryžkov, A. V.) The problem of the propagation of electromagnetic waves by a conducting ball and a study of the spectral characteristics of the field. (Russian) **58** #14399
- Mason, D. P. The Vlasov-Maxwell operators in self-adjoint form. **54** #4353
- McCarthy, Matthew F. (with Tiersten, H. F.) On integral forms of the balance laws for deformable semiconductors. **58** #8823
- McClelland, G. M. See Case, D. A.; et al., **57** #11371
- Meidan, Reuven Distribution theory as the basis of a postulational foundation of linear optical systems. **54** #9362
- Molotov, V. V. See Urazakov, E. I., **57** #14936
- Oleś, A. M. On the single site approximation in the Hubbard model. **56** #14160
- Paškovskii, V. I. Application of the method of connected operators to the study of wave propagation in inhomogeneous media. (Russian) **57** #2203
- Ramm, A. G. Eigenfunction expansion of a discrete spectrum in diffraction problems. **50** #1641
- Rutkas, A. G. Properties of the scattering and transmission functions of waves in structures with a given geometry. (Russian) **58** #25409
- Ryžkov, A. V. See Makarov, G. I., **58** #14399
- Suetenko, A. V. An inverse problem of the scattering of electromagnetic waves on a plasma body. (Russian) **45** #2990
- Tiersten, H. F. See McCarthy, Matthew F., **58** #8823
- Urazakov, E. I. (with Molotov, V. V.) On the theory of the excitation of circular coaxial wave guides with gaps. (Russian. Kazakh summary) **57** #14936
- Vagapov, A. M. (with Kosenko, G. G.) The problem of general definition and properties of a scattering matrix. **50** #3783
- Valenti, C. F. (with Lax, Melvin D.) Classical theory of a rigid magnetic continuum. **57** #14937
- Wu, Shao Ping The eigenvalue problem in waveguide filled with anisotropic medium. **57** #8481
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- Zardecki, Andrzej Functional formalism for ordered electromagnetic field operators. **50** #15610

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- Suetenko, A. V. The problem of electromagnetic wave scattering on a plasma body. (Russian) (**45** #4205)
- Svirskunov, P. N. Propagation of electromagnetic radiation in a randomly inhomogeneous medium of Poisson type. (Russian. English summary) (**57** #14941)
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- 78.49 Calculus of variations and optimal control
- Ageev, V. N. (with Žarinov, V. V.) An inverse problem of geometric optics. (Russian) **56** #14161
- Anderson, N. (with Arthurs, A. M.) Extremum principles for constraint problems in electrostatics. **47** #2922
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- Angell, Thomas S. (with Kleinman, Ralph E.) Optimal control problems in radiation and scattering. **58** #8824
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- Čečkin, A. V. The function space method for the solution of the inverse problem in the theory of antennas. (Russian) **45** #9599
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- Ciobotaru, Ionel See Mercheș, I.; et al., **58** #32423b
- Coen, Shimon Comments on: "Variational formulation of the Dirichlet boundary condition" (IEEE Trans. Microwave Theory Tech. **20** (1972), 385-390) by Terence George Hazel and Alvin Wexler. **50** #1643
- Crawford, F. W. See Kim, Hongjin, **57** #18501a; Kim, Hongjin, **57** #18501b and Galloway, J. J., **57** #18501c
- Dökmeçi, M. Cengiz On the higher order theories of piezoelectric crystal surfaces. **50** #6326
- Eringen, A. Cemal See Maugin, Gérard A., **49** #10263
- Fabrizio, Mauro Su una disequazione variazionale per le equazioni non lineari di Maxwell. (English summary) **51** #12142
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- Galloway, J. J. (with Crawford, F. W.) Microscopic Lagrangian description of warm plasmas. III. Nonlinear wave-particle interaction. **57** #18501c
- Grač, I. M. (with Poljakov, B. M.) The connection between potentials on an axis of symmetry and those on the boundary of the domain of definition of the field. (Russian) **56** #17516
- Grigorescu, C. See Mercheș, I.; et al., **58** #32423b
- Hammond, Peter Equilibrium and duality in electromagnetic field problems. **58** #25410
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- Hutter, Kolumban On thermodynamics and thermostatics of viscous thermoelastic solids in the electromagnetic fields. A Lagrangian formulation. **52** #16294 (E **54** #6697)
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- Il'inskii, A. S. A direct method of calculating periodic lattices. (Russian) **47** #4543
- Kim, Hongjin (with Crawford, F. W.) Microscopic Lagrangian description of warm plasmas. I. Linear wave propagation. **57** #18501a
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- Kinikstul', E. I. See Kulikov, E. L.; et al., **51** #4860
- Kleinman, Ralph E. See Angell, Thomas S., **58** #8824
- Kolokolov, A. A. Existence of stationary solutions of the nonlinear wave equation. **53** #9885
- Konrad, A. Vector variational formulation of electromagnetic fields in anisotropic media. **56** #14163
- v. Krzywoblocki, Maria Z. Controllability and solvability of the wave propagation in troposphere. **50** #15611
- Kulikov, E. L. (with Kinikstul', E. I.; Timchenko, L. P.) Estimate of error in the solution of interior problems of microwave electrodynamics. **51** #4860
- Kumagai, Nobuaki See Morishita, Katsumi, **56** #10451
- Levoni, Sergio Variational principles in the electrostatics of hereditary media. (Italian summary) **47** #2923
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- Lietuviets, O. I. (with Radzin's, G. A.; Raitums, U.) On the optimization of plane-parallel magnetic fields. (Russian) **56** #14164
- Maugin, Gérard A. An action principle in general relativistic magnetohydrodynamics. (French summary) **46** #1215
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- Mercheș, I. Variational principle in magnetohydrodynamics. **58** #32423a
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- Morishita, Katsumi (with Kumagai, Nobuaki) Unified approach to the derivation of variational expression for electromagnetic fields. **56** #10451
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- Noyola-Isgleas, Arturo Geometrical optics and dynamic programming. **54** #1888
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- Casti, John X and Y operators for general linear transport processes. 51 #14763
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- Solomon, Alan D.** On variational approaches to steady state heat conduction. **53** #15115
- Stärk, A.** Approximation methods for the solution of heat conduction problems under Gyarmati's principle. **52** #4830
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- Bhargava, S.** (with Duffin, Richard J.) Network models for maximization of heat transfer under weight constraints. (**48** #10897)
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80.53 Differential geometry

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- Coleman, Bernard D.** (with Dill, Ellis H.) On thermodynamics and the stability

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- Fáy, G. A phenomenological foundation of quantum logic. (Russian summary) (45 #1486)
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- Itzykson, Claude See Drouffe, J. M., (58 #4013)
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- Segal, Irving Ezra Symplectic structures and the quantization problem for wave equations. (52 #15571)
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- Shrivastava, B. M. Solvable potentials for the Chebyshev and associated Laguerre equations. (57 #12943)
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- Steinmann, Othmar Two-soliton solutions of relativistic field equations. (58 #11840)
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- Strauss, Walter A. Existence of solitary waves in higher dimensions. (56 #12616)
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- Thompson, Mark Eigenfunction expansions and the associated scattering theory for potential perturbations of the Dirac equation. (46 #4016)
- Uchiyama, Jun See Mochizuki, Kiyoshi, (58 #23153)
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- Weidmann, Joachim See Jörgens, Konrad, (58 #11990) and Jörgens, Konrad, (58 #29409)
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- Yonezawa, Teijiro See Nakatsuji, Hiroshi; et al., (51 #4878)
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81.39 Finite differences and functional equations

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- Casati, G. See Caldirola, Piero; et al., 57 #18576
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- Graffi, Sandro (with Grecchi, Vincenzo) On the divergent perturbation expansion for the vacuum polarization by an external field. 47 #2943
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- Allen, G. D. See Narcowich, Francis J., 52 #16359
- (Baker, George A., Jr.) See Padé approximant in theoretical physics, 56 #7587
- Banks, Thomas (with Zaks, Alexander) Semiclassical spectrum of the two-dimensional non-linear σ models. 58 #8908
- Basuev, A. G. Convergence of perturbation theory expansion for the Yukawa interaction. (Russian. English summary) 58 #8909
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- Imoto, Michiko Reggeized short-range potential using the Veneziano representation. 47 #6220
- Jurkiewicz, Jerzy (with Wosiek, J.) Padé approximants on a lattice. 58 #14599
- Katriel, Jacob See Moiseyev, Nimrod, 58 #8910
- Kikkawa, Keiji (with Sato, Masaki; Uehara, Kunihiko) Non-linear strings. 57 #15037
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- Soper, Davison Eugene See Collins, John C., **58** #19972
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- Tiktopoulos, George (with Treiman, S.) Validity of the relativistic eikonal approximation. **48** #1614
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- Vasavada, Kashyap V. Dispersion of the Veneziano representation in trajectory parameters, Regge cuts, and unitarity corrections. **48** #13054
- Veltman, Martin J. G. See 't Hooft, G. W., **50** #3804
- Vesman, E. On the question of the uniqueness of the sum of the asymptotic series in the theory with a nonpolynomial Lagrangian. (Russian. Estonian and English summaries) **54** #1953
- Weidenmüller, Hans A. See Schucan, Thomas H., **51** #12184
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- Zorbas, J. Perturbation theory for Coulomb scattering. **57** #2290
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- (Jones, William B.) See Proceedings: International Conference on Padé Approximants, Continued Fractions and Related Topics, (**48** #5775)
- Rembiesa, Piotr $1/N$ expansion for nonlinear scalar interactions. (**57** #4875)
- (Thron, W. J.) See Proceedings: International Conference on Padé Approximants, Continued Fractions and Related Topics, (**48** #5775)
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81.42 Fourier analysis

- Cornille, Henri (with Martin, André) Constraints on the phases of helicity amplitudes due to positivity. **50** #12049
- Islam, M. M. Impact parameter representation from the Watson-Sommerfeld transform. **53** #4792

- Klink, William H. Expansions in Breit-Wigner amplitudes and biorthogonal functions. **50** #1662
- Martin, André See Cornille, Henri, **50** #12049
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81.43 Abstract harmonic analysis

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81.44 Integral transforms, operational calculus

- Abarbanel, Henry D. I. (with Saunders, L. M.) Laplace transforms and the diagonalization of Bethe-Salpeter equations for absorptive parts. **47** #6229
- Arusanov, G. G. The Hankel integral transform of the scattering amplitude. (Russian. Uzbek summary) **52** #9882
- Bassiouny, A. K. (with El-Sayed, M. A.) On the analytic continuation of the scattering amplitude. (Arabic summary) **52** #2453
- Bergère, M. C. (with Lam, Yuk-Ming P.) Asymptotic expansion of Feynman amplitudes. I. The convergent case. **51** #2519
- Calogero, F. (with Degasperis, Antonio) Nonlinear evolution equations solvable by the inverse spectral transform. I. (Italian and Russian summaries) **54** #14581
- Corbett, J. V. (with Hurst, C. A.) Arc wave functions uniquely determined by their position and momentum distributions? **58** #8911
- Coz, Marcel Les transformées de Fourier dans l'équation de Schrödinger à une dimension. (English summary) **54** #12031
- Degasperis, Antonio See Calogero, F., **54** #14581
- El-Sayed, M. A. See Bassiouny, A. K., **52** #2453
- Englefield, M. J. Solution of Coulomb problem by Laplace transform. **50** #12050
- Epstein, Saul T. See Handy, N. C., **48** #10356
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- Graffi, Sandro Sulla teoria delle perturbazioni per la funzione di partizione di un sistema di oscillatori anarmonici. I, II. (Not reviewed)
- Handy, N. C. (with Epstein, Saul T.) Determination of molecular properties by the method of moments. **48** #10356
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- Kohn, W. (with Yaniv, A.) Locality principle in wave mechanics. **58** #25552
- Kruger, J. G. (with Poffyn, A.) Quantum mechanics in phase space. III. Linear transformations. **58** #14600
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- Levin, V. G. See Neudačín, V. G.; et al., **58** #25553
- Neudačín, V. G. (with Smirnov, Ju. F.; Pavličenko, A. V.; Levin, V. G.) On the study of the double Fourier transforms of the electron wavefunctions for atoms and molecules using the $(\gamma, 2e)$ and $(e, 3e)$ processes at high energies. **58** #25553
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- Volkov, M. K. The method of description of nonrenormalizable interactions with account taken of unitarity. (Russian. English summary) **57** #18578
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81.45 Integral equations

- Abramov, D. I. (with Komarov, I. V.) Integral equations and relations for the Coulomb spheroidal functions. (Russian. English summary) **57** #4890
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- Arsen'ev, A. A. Uniqueness and existence in the small of the classical solution of Vlasov's system of equations. (Russian) **50** #6400
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- Barabanenkov, Ju. N. A resolvent method for the estimation of the error in the solution of the Bethe-Salpeter equation in the Fraunhofer approximation. (Russian. English summary) **57** #2291
- Baughoff, W. Fredholm approximations in the scalar Bethe-Salpeter equation. **53** #4793
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- Becchi, C. M. (with Collina, R.) On the connection between Levinson's theorem and singular integral equations. **46** #10322
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- Bogolubov, N. N. (with Mešerjakov, V. A.; Tavhelidze, A. N.) Application of N. I. Mushelišvili's methods in the theory of elementary particles. (Russian) **52** #2454
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- Brayshaw, D. D. Singular core interactions and three-body theory. **45** #1504
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82.10 Number Theory

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Sharma, S. D. Old Indian theory of numbers and its applications in nuclear and solid state physics. (**57** #15844)

82.15 Linear and multilinear algebra; matrix theory

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82.17 Nonassociative rings and algebras

- Solomon, A. L. Three novel applications of Lie algebras. **58** #20064

82.20 Group theory and generalizations

- Agapova, L. I. See Kravčenko, T. P.; et al., **53** #15219
 Ališauskas, S. (with Vanagas, V. V.) A certain class of isoscalar factors for the semicanonical basis of the group U_n . (Russian. Lithuanian and English summaries) **58** #8975
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- asad, L. S. R. K. See Krishnamurty, T. S. G.; et al., (58 #16864)
- uartapelle, L. See Car, R.; et al., (54 #2778a (E 54 #2778b)) and Car, R.; et al., (54 #2778b)
- ama Mohana Rao, K. See Krishnamurty, T. S. G.; et al., (58 #16864)
- oberts, John E. See Buchholz, Detlev, (53 #14153)
- oyer, François See Tvard, Claude, (50 #12089)
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- chwarzenberger, R. L. E. Classification of crystal lattices. (48 #1950)
- herman, Seymour Positive definiteness and positive differences. (46 #7364 (EA 47))
- avard, Claude (with Royer, François) Sur la détermination de l'anisotropie de texture des solides polycristallins. (50 #12089)
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- amorzaev, A. M. ★Теория простой и кратной антисимметрии. [The theory of simple and multiple antisymmetry] (58 #5965)

82.22 Topological groups, Lie groups

- Bacis, R. See Massot, J. N., 54 #6798
- Barber, Michael N. An introduction to the fundamentals of the renormalization group in critical phenomena. 56 #10636
- Berenson, Rhoda See Birman, Joseph L., 50 #15761
- Berezinskii, V. L. Destruction of long-range order in one-dimensional and two-dimensional systems having a continuous symmetry group. I. Classical systems. 47 #2951
- Birman, Joseph L. (with Berenson, Rhoda) Scattering tensors and Clebsch-Gordan coefficients in crystals. 50 #15761
- Bray, A. J. (with Moore, M. A.) Critical behaviour of semi-infinite systems. 58 #25662
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- van den Broek, P. M. The relation between the factor systems of a group and those of an invariant subgroup. 56 #2115
- Čerepanov, V. I. See Men', B. A.; et al., 48 #13096
- Chatterjee, R. See Kibler, Maurice R., 58 #20065
- Dobrušin, R. L. (with Shlosman, S. B.) Absence of breakdown of continuous symmetry in two-dimensional models of statistical physics. 54 #12074
- Greenberg, William Thermodynamic duality for classical systems of arbitrary spin. 48 #5566
- Gruber, Christian See Hintermann, A., (See RZMat 1977 #2 A290; MR 57 #11993)
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- Kalinauskas, R. K. (with Vanagas, V. V.) General properties of weight functions, and the averaging of operators with respect to the internal variables of the nucleus. (Russian. Lithuanian and English summaries) 58 #8979
- Karasev, V. P. (with Šeplein, L. A.) Difference methods and their role in the theory of coherence phenomena. (Russian) 58 #32649
- Kibler, Maurice R. (with Chatterjee, R.) Adaptation à la symétrie, équivalents opératoires et résonance magnétique. (English summary) 58 #20065
- Kontorović, V. M. See Kac, A. V., 54 #14655
- Lebowitz, Joel L. (with Monroe, James L.) Inequalities for higher order Ising spins and for continuum fluids. 48 #1627
- Lebrun, J.-P. Some remarks concerning the equation of state near a critical point. 56 #4581
- Massot, J. N. (with Bacis, R.) Symmetry and invariance properties of the Boltzmann equation on different groups. 54 #6798
- Men', A. N. See Men', B. A.; et al., 48 #13096
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- Michel, Louis À propos des brisures spontanées de symétrie. 58 #25663
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- Wilson, Kenneth G. Renormalization group methods. 58 #32651
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82.26 Real functions

- Bountis, Tassos (with Helleman, Robert H. G.) Exact statistical mechanics of some classical 1D systems. 57 #2353
- Bray, J. W. See Chui, S. T., 56 #14412
- Chui, S. T. (with Bray, J. W.) Localization versus delocalization in the one-dimensional Tomonaga model with impurities. 56 #14412
- Fano, Guido (with Gallavotti, Giovanni) Dense sums. 50 #9258
- Gallavotti, Giovanni See Fano, Guido, 50 #9258
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- Preston, Christopher J. An application of the GHS inequalities to show the absence of phase transition for Ising spin systems. 49 #1999
- Provost, J. P. (with Rocca, F.; Vallée, G.) Phase operator and phase transition in a classical Dicke model. 58 #8980
- Rocca, F. See Provost, J. P.; et al., 58 #8980
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82.28 Measure and integration

- Aizenman, Michael (with Goldstein, Sheldon; Lebowitz, Joel L.) Ergodic properties of an infinite one dimensional hard rod system. 51 #12225
- Beltman, J. M. Thermodynamic equivalence of spin systems. 52 #4899
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- Ford, G. W. (with Lewis, J. T.; McConnell, James) Graphical study of rotational Brownian motion. 56 #7668
- Gercik, V. M. Conditions for the nonuniqueness of a Gibbs state for lattice models with finite interaction potential. (Russian) 57 #18657
- Goldstein, Sheldon Space-time ergodic properties of systems of infinitely many independent particles. 51 #12226
- See also Aizenman, Michael; et al., 51 #12225
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- Hobson, Arthur Ergodic properties of a particle moving elastically inside a polygon. 52 #9925
- Iagolnitzer, Daniel (with Souillard, Bernard) Decay of correlations for slowly decreasing potentials. 58 #20067
- Lanford, Oscar E., III (with Lebowitz, Joel L.) Time evolution and ergodic properties of harmonic systems. 56 #17633
- Lebowitz, Joel L. See Aizenman, Michael; et al., 51 #12225 and Lanford, Oscar E., III, 56 #17633
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- Lenard, Andrew Correlation functions and the uniqueness of the state in classical statistical mechanics. 48 #1628
- States of classical statistical mechanical systems of infinitely many particles. I. 52 #12649
- States of classical statistical mechanical systems of infinitely many particles. II. Characterization of correlation measures. 52 #12650
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- Minlos, R. A. (with Natapov, G. M.) Uniqueness of the limit Gibbs distribution in one-dimensional classical systems. (Russian. English summary) 58 #8981
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- Presutti, Errico A mechanical definition of the thermodynamic pressure. 56 #14415
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- Slawny, Joseph A family of equilibrium states relevant to low temperature behavior of spin 1/2 classical ferromagnets. Breaking of translation symmetry. 49 #4496
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- Lanford, Oscar E., III See Goldstein, Sheldon; et al., (48 #6364)
- Lebowitz, Joel L. See Goldstein, Sheldon; et al., (48 #6364)

- Ledraupier, François Mesures d'équilibre sur un réseau. (English summary) (50 #575)
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- zula, Rostislav** On a class of nonlinear eigenvalue problems arising in reactor physics. **50** #15794
- On some nonlinear problems in critical reactor control. **57** #11550

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- thurs, A. M.** Error bound for a class of non-linear problems in diffusion and reaction. (53 #13696)
- nk, N.** See Lazarevič, B.; et al., (47 #2468)
- ousson, Paul** Programmation mathématique et équilibre chimique. (50 #12275)
Sur un programme mathématique associé à un système réactif composite. (50 #12276)
- orte, Bruno** (with Sempì, Carlo) Maximizing conditional entropies: a derivation of quantal statistics. (Italian summary) (56 #4605)
- oga, Ryuji** Optimal control of a nuclear power reactor core with a coupled nuclear thermo-hydrodynamics model. (56 #1166)
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- empi, Carlo** See Forte, Bruno, (56 #4605)
- akely, P. G.** An unfamiliar application of the Rayleigh-Ritz variation method. (58 #30687)

82.50 Geometry

- čašnik, E. I.** See Židkov, N. P.; et al., **51** #14845
- orini, Vittorio** (with Sudarshan, E. C. G.) Extreme affine transformations. **54** #6817
- uckaby, Dale A.** Phase transitions in lattice gases of hard-core molecules having two orientations. **57** #15146
- cedrin, B. M.** See Židkov, N. P.; et al., **51** #14845
- sudarshan, E. C. G.** See Gorini, Vittorio, **54** #6817
- idkov, N. P.** (with Čašnik, E. I.; Šćedrin, B. M.) Certain mathematical questions on the interpretation of Debye powder patterns. (Russian) **51** #14845

82.53 Differential geometry

- lvarez, E.** Corrigendum: "On the generalized relativistic Liouville equilibrium" (J. Phys. A **9** (1976), no. 5, 687-696). **55** #7253b

- Bancel, Daniel** Cauchy problem for the Einstein-Boltzmann system. (French summary) **58** #25693
- Bedeaux, Dick** (with Kapral, Raymond; Mazur, P.) The effective shear viscosity of a uniform suspension of spheres. **56** #10677
- de Groot, Sybren Ruurds** The laws of relativistic thermodynamics. I. The macroscopic quantities. **56** #4603
The laws of relativistic thermodynamics. II. The density, momentum and energy laws. **56** #4604
- Kapral, Raymond** See Bedeaux, Dick; et al., **56** #10677
- Kranyš, Miroslav** Eigenwaves in a relativistic gas according to Marle's 14-moment description. **54** #9539
- Krause, Jorge** Orthonormal tetrad transport. II. Physical identification of the normals and curvatures of a time-like curve. **54** #6819
Some remarks on orthonormal tetrad transport. **54** #6818
- Lai, C. S.** Energy-momentum tensor in the microscopic plasma model. (French summary) **53** #10086
- Lax, Melvin D.** See Nelson, D. F., **56** #2144
- Marcinkowski, M. J.** (with Sadananda, K.) The differential geometry of disclinations: twist disclinations. (German summary) **58** #20106
- Mayer, Meinhard E.** Models for relativistic statistical mechanics. **58** #32684
- Mazur, P.** See Bedeaux, Dick; et al., **56** #10677
- Nelson, D. F.** (with Lax, Melvin D.) Linear elasticity and piezoelectricity in pyroelectrics. **56** #2144
- Perrin, Henri** Équilibre et rotation circulaire d'un plasma toroidal relativiste. (English summary) **54** #12092
- Pervikova, V. N.** (with Volkov, V. Ja.) Geometric shapes in E_4 that are adequate for the free energy of heterogeneous solutions of 3-component systems. (Russian) **52** #16448
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- Sampaio, Rubens** An axiomatic theory of mixtures with diffusion. **54** #6820
- Thompson, William B.** The self-consistent test-particle approach to relativistic kinetic theory. **58** #14833
- Volkov, V. Ja.** See Pervikova, V. N., **52** #16448

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- Balescu, Radu** (with Poulain, M.) A manifestly gauge-invariant Hamiltonian formulation of classical electrodynamics. (51 #9669)
- Lax, Melvin D.** (with Nelson, D. F.) Electrodynamics of elastic pyroelectrics. (58 #14211)
See also Nelson, D. F., (58 #14212)
- Nelson, D. F.** (with Lax, Melvin D.) Asymmetric total stress tensor. (58 #14212)
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- Poulain, M.** See Balescu, Radu, (51 #9669)
- van Weert, Ch. G.** On the relativistic kinetic theory of particles with a magnetic dipole moment in an external electromagnetic field. I. The relativistic transport equation for a simple gas of magnetic dipole particles. (45 #6369)
On the relativistic kinetic theory of particles with a magnetic dipole moment in an external electromagnetic field. II. Conservation laws and equilibrium properties for a gas mixture of magnetic dipole particles. (45 #6370)
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82.54 General topology

- Case, Kenneth M.** (with Lau, C. W.) The one-dimensional X - Y model in inhomogeneous magnetic fields. **48** #5568
- Lau, C. W.** See Case, Kenneth M., **48** #5568
- Merrifield, R. E.** See Simmons, H. E., **57** #11551
- Simmons, H. E.** (with Merrifield, R. E.) Mathematical description of molecular structure: molecular topology. **57** #11551
- Stillinger, Frank H.** Axiomatic basis for spaces with noninteger dimension. **55** #7251

82.55 Algebraic topology

- Bailin, D.** (with Love, A.) Topology of singularities in the A_1 phase of superfluid ^3He . **58** #14834
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- Bouligand, Y.** (with Derrida, Bernard; Poénaru, Valentin; Pomeau, Yves; Toulouse, G.) Distortions with double topological character: the case of cholesterics. **58** #14835
- Derrida, Bernard** See Bouligand, Y.; et al., **58** #14835
- Love, A.** See Bailin, D., **58** #14834 and Bailin, D., **58** #25694
- Mineev, V. P.** See Volovik, G. E., **58** #25695
- Poénaru, Valentin** See Bouligand, Y.; et al., **58** #14835
- Pomeau, Yves** See Bouligand, Y.; et al., **58** #14835
- Shankar, R.** Applications of topology to the study of ordered systems. (French summary) **57** #2380
- Toulouse, G.** See Bouligand, Y.; et al., **58** #14835
- Volovik, G. E.** (with Mineev, V. P.) Investigation of singularities in superfluid He^3 in liquid crystals by homotopic topology methods. **58** #25695

82.58 Global analysis, analysis on manifolds

- Bruslinskaja, N. N.** Quotient invariance of the equations of chemical kinetics along a uniform set in the parameter space. (Russian) **58** #25696
- Buffet, Emmanuel** (with Martin, Philippe A.) Dynamics of the open BCS model. **58** #14836

- Ebeling, Werner (with Engel-Herbert, H.) Strukturelle Instabilitäten nichtlinearer irreversibler Prozesse: (English summary) **58** #32686
- Ehlers, Jürgen Progress in relativistic statistical mechanics, thermodynamics, and continuum mechanics. **55** #11889
- Engel-Herbert, H. See Ebeling, Werner, **58** #32686
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- Jackson, E. Atlee Nonlinearity and irreversibility in lattice dynamics. **57** #18675
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- Kashiwara, Masaki See Sato, Mikio; et al., **58** #4127
- Martin, Philippe A. See Buffet, Emmanuel, **58** #14836
- Matsumoto, H. See Wadati, Miki; et al., **58** #25697
- Mistura, L. Critical phases in multicomponent fluid mixtures. **54** #6821
- Miwa, Tetsuji See Sato, Mikio; et al., **58** #4127 and Sato, Mikio; et al., **58** #32623d
- Nattermann, Th. (with Trimper, S.) Die Parkettanäherung in der Theorie der Phasenübergänge. **58** #32687
- Niwa, Toshio Time correlation functions of a one-dimensional infinite system. **58** #4125
- Rezven, M. See Schulman, L. S., **54** #6822
- Ruelle, D. Equilibrium statistical mechanics of one-dimensional classical lattice systems. **58** #32688
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- Manifolds that correspond to the coexistence of phases. (Russian. English summary) **56** #2145
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- Sato, Mikio (with Kashiwara, Masaki; Miwa, Tetsuji) Microlocal study of infinite systems. (Japanese) **58** #4127
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- Umezawa, Hiroomi See Wadati, Miki; et al., **58** #25697
- van Velsen, J. F. C. On linear response theory and area preserving mappings. **58** #20107
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- Capocaccia, D. A definition of Gibbs state for a compact set with Z^p action. (**54** #3755) (Coleman, A. J.) See O'Shea, D., (**58** #31181)
- Jimbō, Michio See Sato, Mikio; et al., (**58** #32623a); Sato, Mikio; et al., (**58** #32623b); Sato, Mikio; et al., (**58** #32623c); Sato, Mikio; et al., (**58** #32623e); Sato, Mikio; et al., (**58** #32623f) and Sato, Mikio; et al., (**58** #32623g)
- Mayer, D. H. (with Viswanathan, K. S.) On the ζ -function of a one-dimensional classical system of hard-rods. (**55** #4285)
- Miwa, Tetsuji See Sato, Mikio; et al., (**58** #32623a); Sato, Mikio; et al., (**58** #32623b); Sato, Mikio; et al., (**58** #32623c); Sato, Mikio; et al., (**58** #32623e); Sato, Mikio; et al., (**58** #32623f) and Sato, Mikio; et al., (**58** #32623g)
- O'Shea, D. ★An exposition of catastrophe theory and its applications to phase transitions. (**58** #31181)
- Rössler, Otto E. Horseshoe-map chaos in the Lorenz equation. (**57** #4254)
- Ruelle, D. Statistical mechanics on a compact set with Z^p action satisfying expansiveness and specification. (**47** #4292)
- Statistical mechanics and dynamical systems. (**57** #4256)
- Sato, Mikio (with Miwa, Tetsuji; Jimbō, Michio) Studies on holonomic quantum fields. I. (**58** #32623a)
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- 82.60 Probability theory and stochastic processes
- Abbass, A. S. (with Martin, R.; Johnson, E. A.) Calculation of the transport coefficients for a dilute simple gas using an iterative solution of the Boltzmann equation. **57** #2381
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- Aizenman, Michael (with Gallavotti, Giovanni; Goldstein, Sheldon; Lebowitz, Joel L.) Stability and equilibrium states of infinite classical systems. **53** #12433
- (with Goldstein, Sheldon; Gruber, Christian; Lebowitz, Joel L.; Martin, Philippe A.) On the equivalence between KMS-states and equilibrium states of classical systems. **56** #2147
- (with Lebowitz, Joel L.; Marro Borau, Joaquin) Time-displaced correlation functions in an infinite one-dimensional mixture of hard rods with different diameters. **57** #8806
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- See also Dürr, Detlef, **58** #9010
- Bachmat, Yehuda Spatial macroscopization of processes in heterogeneous systems. **52** #16449
- Band, William (with Park, James L.) Rigorous information-theoretic derivation of quantum-statistical thermodynamics. II. **58** #9020b
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- Benard, Christine Application of Mercer's theorem in field theory. (Italian and Russian summaries) **50** #9269
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- (with Šumovskii, A. S.) A method for computing quasimeans. (Russian) **57** #18678
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- dissipativity, return to equilibrium. **51** #4916
- rdag, M.** (with Vasil'ev, A. M.) "Hidden connections" and the representation of the statistical sum of the canonical ensemble in the form of a functional integral. (Russian. English summary) **58** #14842
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- apocaccia, D.** (with Cassandro, M.; Olivieri, E.) A study of metastability in the Ising model. **51** #2566
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- armeli, Moshe** ★Statistical theory of energy levels and random matrices in physics. **52** #16451
- Statistical theory of energy levels and random matrices in physics. **52** #16450
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- deam, R. T.** (with Edwards, S. F.) The theory of rubber elasticity. **53** #10087
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- dekker, H.** Time-local Gaussian processes, path integrals and nonequilibrium nonlinear diffusion. **55** #5118
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- desai, Rashmi C.** (with Oppenheim, Irwin) Momentum relaxation in dilute and moderately dense gases. **48** #7876
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- dishon, Menachem** See Weiss, George H., **57** #15160
- dobbertin, R.** On functional relations between reduced distribution functions and entropy production by non-Hamiltonian perturbations. **54** #9542
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- dodonov, V. V.** (with Malkin, I. A.; Man'ko, V. I.) Invariants and nonequilibrium density matrices. **58** #32693
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- dolan, J. M.** See Uppuluri, V. R. Rao, **49** #4506
- domb, C.** See Hioe, F. T., **57** #2385
- drange, Hans Birger** On the Boltzmann equation with external forces. **57** #18688
- dresden, M.** Speculations of the intrinsic significance of random interactions. **58** #25702
- dubkov, A. A.** (with Malahov, A. N.) Cumulant analysis of functional non-linear transformation of non-Gaussian random processes and fields. (Russian) **52** #12670
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- (Brosowski, Bruno) See **Mathematical geodesy**, (50 #6721); **Mathematical geodesy**, (50 #6722) and **Mathematical geodesy**, (50 #6723)
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- The inverse problem of logarithmic potential for a contact surface. (Russian) **54** #2133
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- Erratum: "On the theory of bipolar analysis of two-dimensional potential fields" (Russian) **58** #25837b
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- An approach to the solution of inverse problems of gravimetry that is based on the theory of equivalent redistributions of masses. (Russian) **57** #8965
- See also Pučkov, E. P., **57** #15283
- Vaščilov, Ju. Ja. (with Napadenskiĭ, G. B.; Popov, M. G.) An integral method of

- interpreting the anomalies of Δg over a vertical bench. (Russian) **58** #25838
- Ždanov, M. S. Analytic continuation in a region with a curved boundary (two-dimensional potential fields). **52** #12711
- Some questions on the theory of the interpretation of gravitational anomalies depend on three space coordinates. (Russian) **52** #7473
- Zidarov, D. P. (with Petrova, T.) An improved sweeping out-bubbling method obtaining gravitational equivalent bodies. **53** #10165

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- Pavlov, G. A. On the inverse problem for a simple layer potential. (Russian) (**57** #2456)
- Strahov, V. N. (with Tkebučava, V. V.) The analytic continuation of two-dimensional potential fields in sectorial domains. (Russian. Georgian and English summary) (**50** #4981)
- On the theory of the logarithmic potential in the case of variable density of perturbing masses. (Russian) (**58** #22606)
- Tkebučava, V. V. See Strahov, V. N., (**50** #4981)

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- Petrovskaja, M. S. A new form of representing the geopotential. (**57** #2456)

86.34 Ordinary differential equations

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- Brown, A. On the differential equations for tide-well systems. (**45** #3834)

86.35 Partial differential equations

- Alekseev, A. S. (with Dobrinskiĭ, V. I.; Nepročnov, Ju. P.; Semenov, G. A.) On the question of the practical application of the theory of inverse dynamical problems to seismics. (Russian) **57** #8968
- Aleksidze, M. A. (with Gelašvili, M. S.; Kartvelišvili, K. M.) ★ Исследование некоторых вопросов трансформации потенциальных полей. (Russian) [Studies of certain questions of the transformation of potential fields] **50** #15860
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- (Zellmer, G.) See *Operationsforschung*, **57** #4990b and *Operationsforschung*, **57** #4990c
- Zoutendijk, G. ★Mathematical programming methods. **56** #4718
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- Aumann, Robert J. (with Shapley, L. S.) ★Значения для неатомических игр. (Russian) [Values of non-atomic games] **(58** #15223)
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- Roth, Alvin E.** A lattice fixed-point theorem with constraints. (**50** #12839)
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- Individual rationality and Nash's solution to the bargaining problem. (**58** #20534)
- Rupp, W.** ϵ -Gleichgewichtspunkte in n -Personenspielen. (**55** #12137)
- Dun, Frank** On the modes of opposition in the formal dialogues of P. Lorenzen. (**49** #2244)
- Wilson, Robert B.** The finer structure of revealed preference. (**56** #7795)
- Zimmermann, Karel** An approach to the solution of a conflict situation with n participants. (Czech and loose Russian summaries) (**53** #7398)

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- Elfrig, Bernd Zur Existenz eines Spielwertes bei Spielen auf kompakten Räumen mit stetiger Auszahlungsfunktion. **49** #4582
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- Jaskold Gabszewicz, Jean See Drèze, Jacques H.; et al., **(58)** #4212
- Postlewaite, Andrew See Drèze, Jacques H.; et al., **(58)** #4212

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- André, Clément Jeux stochastiques et temps d'arrêt ϵ -optimaux. **46** #4957
- Athans, Michael See Castañon, David A., **55** #10032
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 (Stodola, Aurel Boleslaw) See Profos, P., (55 #7682)
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Vidyasagar, Mathukumalli (with Higgins, Thomas J.) A basic theorem on distributed control and point control. 48 #13374

Vinokurov, V. R. Further comments on the paper: "Optimal control of processes described by integral equations. I". (Izv. Vysš. Učebn. Zaved. Matematika 1976, no. 7(62), 21-33) by V. R. Vinokurov. 55 #12222

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Blatt, John M. Two-valued control with a cost of switching. (56 #1698)

Bolintineanu, S. (with Drăgan, V.) Open-loop iterative solution of the linear quadratic optimization problem. (French and German summaries) (58 #9255)

Bulatov, V. P. (with Danilenko, Ju. Ja.) Numerical methods for the solution of optimal control problems with distributed parameters. (Russian) (56 #1699)

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Drăgan, V. See Bolintineanu, S., (58 #9255)

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Nikol'skii, M. S. Control of a linear object in the presence of counteraction. II. (Russian) (Not reviewed)

An equation in convolutions that arises in avoidance theory. (55 #12163)

Orava, P. Jussi (with Halme, Aarne) Fixed point of polynomial type nonlinear operators. (57 #10516)

Reutov, V. F. See Solodovnikov, V. V., (57 #8101)

Savelova, T. I. Optimal regularization of equations of convolution type with random

- errors in the kernel and on the right-hand side. (Russian) (57 #14554)
- Solodovnikov, V. V. (with Reutov, V. F.) Methods for the approximate solution of some classes of linear integral equations that occur in control theory. (Russian) (57 #8101)
- Treadway, Arthur B. The globally optimal flexible accelerator. (58 #9158)
- Vasil'ev, F. P. Existence conditions for a saddle point in deterministic games for integro-differential systems with a lag of neutral type. (53 #15404)

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- Abbasov, A. A. (with Margovskii, S. N.) Euler's equation for the problem of optimal heating of an oil-bearing layer in a multilayer deposit. (Russian. Azerbaijani and English summaries) 58 #15460
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- Aronoff, Ethan (with Leonides, Cornelius T.) Lower bounds for a quadratic cost functional. 53 #12692
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- Bailey, J. E. Optimal periodic processes in the limits of very fast and very slow cycling. (French, German and Russian summaries) 49 #8709
- Baras, John S. (with Brockett, Roger W.) H^2 -functions and infinite-dimensional realization theory. 56 #14952
- Bensoussan, A. (with Delfour, Michel C.; Mitter, Sanjoy Kumar) The linear quadratic optimal control problem for infinite dimensional systems over an infinite horizon; survey and examples. 56 #17998
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- Da Prato, Giuseppe Quelques résultats d'existence et régularité pour un problème non linéaire de la théorie du contrôle. 53 #12693
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- Rolewicz, Stefan Linear systems in Banach spaces. (54 #11137)
- Ryan, E. P. See Pritchard, Anthony J., (58 #26333)
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- Džamalova, T. A. Solution by means of a digital computer of a problem of the control of multistage chemical processes by the method of dynamic programming. (Russian) 52 #10151
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- Garland, B. See Marshall, J. E.; et al., 57 #9206
- Georganas, Nicolaos D. See Ahmed, Nasiruddin, 48 #13375
- Hakkala, Lauri On infeasible gradient-type coordination algorithms for dynamical systems. 58 #15462
- Hasmamedov, F. I. Methods of establishing the equation of the dynamics of complicated thermal objects when examining them as objects of control with concentrated parameters. (Russian) 46 #1409
- Hata, Shiroh (with Takashima, Yoshinao; Maruoka, Takaharu) An optimal control for a system with time delay. (Japanese. English summary) 52 #5124
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- Kalinin, A. I. A method for the improvement of attainable controls in discrete systems. (Russian) 58 #9574
- Kiselev, Ju. N. The rank of the functional matrix of the mapping that describes the isochrone surfaces in a linear time-optimality problem. (Russian) 57 #15639
- Kondrat'ev, V. V. (with Minnik, A. P.) Synthesis of an optimal discrete control system when there is a lag in the control. (Russian. English summary) 57 #9205
- Korikov, A. M. Application of difference equations in the investigation of the stationary regime of the performance of a gradient extremal system with an inertial plant. (Russian. English summary) 45 #6487
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- Luus, Rein See Oh, Se H., 57 #11884
- Lysjanskii, A. V. See Zubasić, V. F., 51 #15088

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- Beiko, I. V. (with Kopeč, M. M.) The zero controllability of linear stationary systems in a Banach space. (Russian) (53 #3836)
- Datko, Richard Some linear nonautonomous control problems with quadratic cost. (53 #14253)

- Malinowski, Krzysztof B.** Applicability of the Lagrange multiplier method to the optimization of quadratic systems. **56** #14953
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- Marshall, J. E.** (with Ireland, B.; Garland, B.) Comments on: "An extension of predictor control for systems with control time-delays" (Internat. J. Control (1) **18** (1973), 1151-1168) by D. H. Mee. **57** #9206
- Maruoka, Takaharu** *See* **Hata, Shiroh; et al.**, **52** #5124
- McGuire, Timothy W.** *See* **Sethi, Suresh P.**, **58** #9578
- Medvedovskii, I. B.** *See* **Pšeničnyi, B. N.**, **58** #9577
- Mee, D. H.** *See* **Marshall, J. E.; et al.**, **57** #9206
- Merzanov, V. Ju.** *See* **Alekseev, O. G.**, **58** #9573
- Mira, Christian** Dynamique complexe engendrée par une récurrence, ou transformation ponctuelle, continue, linéaire par morceaux, du premier ordre. (English summary) **58** #9575
- Minnik, A. P.** *See* **Kondrat'ev, V. V.**, **57** #9205
- Nardizzi, Louis R.** *See* **Tarn, Ming Y.**, **48** #3556
- Oh, Se H.** (with Luus, Rein) Optimal feedback control of time-delay systems. **57** #11884
- Oja, Erkki** Asymptotic solutions of a class of matrix differential equations arising in neural network modelling. **58** #9576
- Pšeničnyi, B. N.** (with Medvedovskii, I. B.) Necessary conditions of the extremum for a linear optimal control problem with phase constraints. (Russian) **58** #9577
- Raženkov, E. T.** *See* **Volkov, E. F.**, **58** #9579
- Ritch, P. S.** Discrete optimal control with multiple constraints. I. Constraint separation and transformation technique. (French, German and Russian summaries) **55** #12223
 Discrete optimal control with multiple constraints. II. The batch crystallisation of sugar. (French, German and Russian summaries) **55** #12224
- Sethi, Suresh P.** (with McGuire, Timothy W.) Optimal skill mix: an application of the maximum principle for systems with retarded controls. **58** #9578
- Shimemura, Etsujiro** (with Uchida, Kenkō) On synthesis of feedback control in a linear system with time-delay. **53** #5103
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- Šindelář, Jaroslav** The quadratic criterion of control process quality using the exponential weighting function. **53** #12694
- Singh, Madan G.** (with Coales, John F.) A heuristic approach to the hierarchical control of multivariable serially connected dynamical systems. **51** #7665
- Sobolev, O. S.** Multichannel control of interconnected inertia-free channels. (Russian) **52** #5125
- Takashima, Yoshinao** *See* **Hata, Shiroh; et al.**, **52** #5124
- Tarn, Ming Y.** (with Nardizzi, Louis R.) The maximum principle and the ϵ -technique for systems described by partial-difference equations. **48** #3556
- Tatjewski, Piotr** *See* **Findeisen, Wladislaw; et al.**, **57** #15638
- Tazaki, Eiichiro** (with Shindo, A.; Umeda, T.) Decentralized optimization of a chemical process by a feasible method. (French, German and Russian summaries) **48** #13376
- Tkalč, E. F.** An algorithm for the synthesis of optimal control of a system in the presence of constraints of integral type. (Russian. English summary) **52** #7643
- Tracht, R.** Ein iteratives Verfahren zur Bestimmung der zeitoptimalen Steuergröße. (English summary) **48** #1756
- Trubicin, M. F.** *See* **Batenko, A. P.**, **52** #5123
- Tsoli, A. C.** Explicit solution to a class of functional differential equations. **53** #15474
- Tzafestas, S. G.** Walsh series approach to lumped and distributed system identification. **57** #18975
- Uchida, Kenkō** *See* **Shimemura, Etsujiro**, **53** #5103
- Umeda, T.** *See* **Tazaki, Eiichiro; et al.**, **48** #13376
- Volkov, E. F.** (with Raženkov, E. T.) Equations in functional derivatives, and problems of constructing complex systems. (Russian) **58** #9579
- Wozniak, Adam** *See* **Findeisen, Wladislaw; et al.**, **57** #15638
- Zubašić, V. F.** (with Lysjanskii, A. V.) A study of control systems with minimal number of communication channels. (Russian. English summary insert) **51** #15088
- Žuk, K. D.** On the theory of logical-dynamic control systems. **48** #3557

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- Abundov, A. A.** Observability of linear hybrid systems. (Russian) (**53** #7552)
- Barraud, Alain** Riccati-un sous-programme FORTRAN pour la résolution des équations de Riccati discrètes. (**56** #7268)
- Beresnev, V. V.** Necessary optimality conditions for systems of discrete inclusions. (Russian. English summary insert) (**57** #7319)
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- Gomarell, M. I.** ★Некоторые проблемы оптимального равновесия сложных управляемых систем. (Russian) [Certain problems on the optimal equilibrium of complex control systems] (**56** #17723)
- Hämäläinen, Raimo P.** Difference games with periodic information structures with application to the worst case design of regulators. (Not reviewed)
- Kawashima, Hironao** On the inversion of certain convolution operators related to feedback systems. (**51** #1386)
- Kononenko, A. F.** Game-theoretic analysis of a two-level hierarchic control system. (Russian) (**50** #15938)
- Kostenko, Ju. V.** (with Boičuk, L. M.) Solution of a linear programming problem regarded as a functional control problem. (**45** #7946)
- Lee, E. B.** Geometric theory of linear controlled systems. (**48** #2868)
- Martin, Jean-Claude E.** Prediction of the solution of a class of parabolic equations using spatial averaging sensors. (**53** #6105)
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- Aksenov, G. S.** (with Fomin, V. N.) Linear adaptive control systems. I. (Russian) **51** #2707
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- Alster, Jacob** (with Bélanger, Pierre R.) A technique for dual adaptive control. **56** #14954
- Arnold, K.** *See* **Molinari, Brian P.**, **52** #12904
- Arutjunjan, G. A.** (with Grigorjan, L. Z.) The efficiency of adaptive control systems. (Russian. Armenian summary) **47** #8159
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 (with Kimura, Masayuki) The structures of automata to adapt to an unknown environment. **53** #15475
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- Bagrakovskaja, Z. V.** Some properties of algorithms for V -voting. (Russian. English summary insert) **57** #5286
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94-XX INFORMATION AND COMMUNICATION, CIRCUITS, AUTOMATA [For papers in pattern recognition, linguistics and formal languages, see 68A30, 68A45.]

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- (L) Iapjanov, O. B. See Cybernetics collection. 48 #5714
- Peschel, Manfred ★Moderne Anwendungen algebraischer Methoden. 55 #5298
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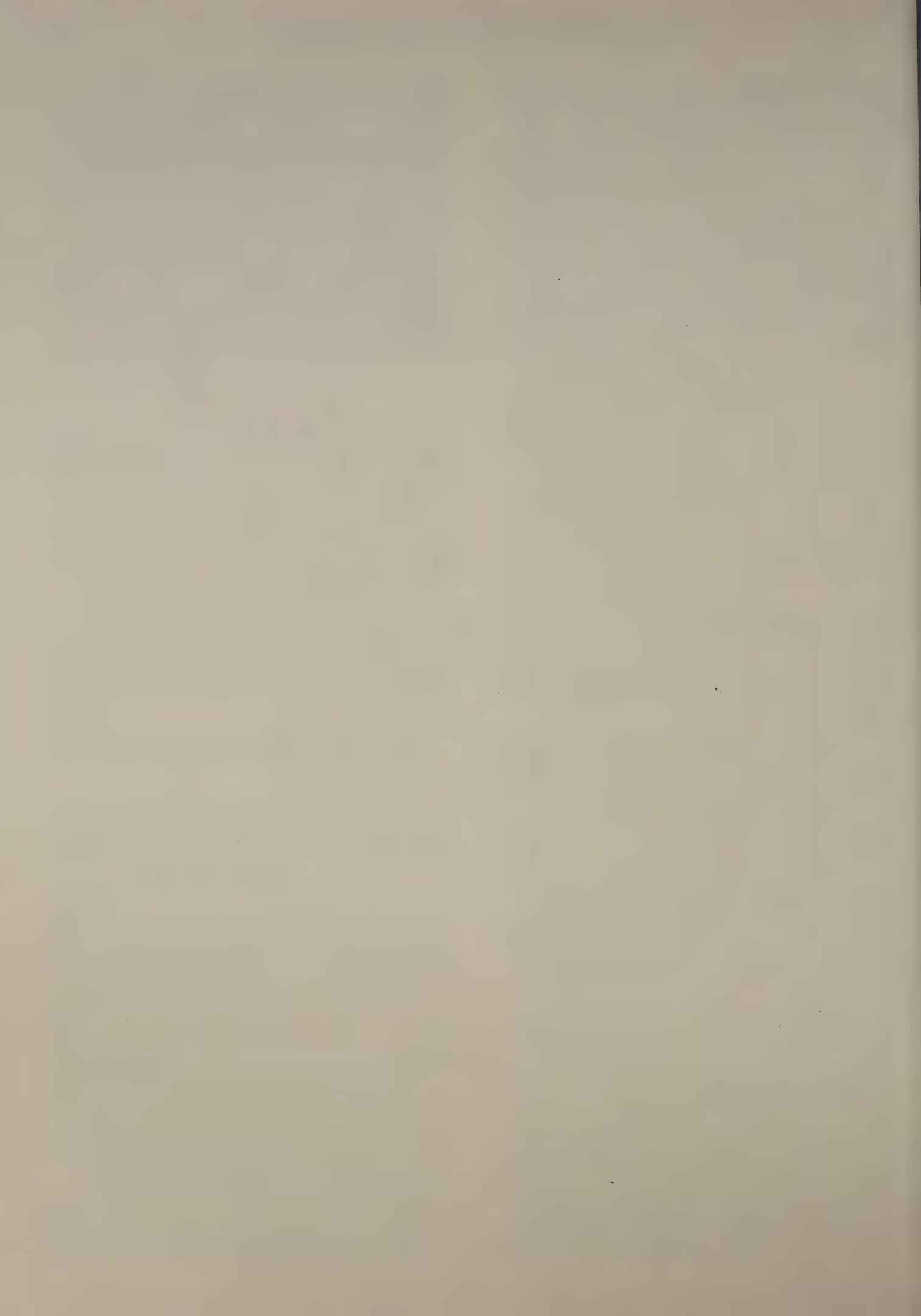
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SUBJECT CLASSIFICATION

The items in the Subject Index of Mathematical Reviews, 1973-79, have been classified according to the following classification scheme. This is essentially the AMS (MOS) Subject Classification Scheme (1970) except in sections 69 through 86.

0-XX GENERAL

- 00-01 Elementary exposition (collegiate level)
- 00-02 Advanced exposition (research surveys, etc.)
- 00A05 General mathematics
- 00A10 Collections of papers; proceedings of conferences of general interest, translation volumes, etc. [See also 01A75.]
- 00A15 General bibliographies
- 00A20 Dictionaries and other general reference works
- 00A25 Methodology and philosophy of mathematics

1-XX HISTORY AND BIOGRAPHY

- 01-01 Elementary exposition (collegiate level)
- 01-02 Advanced exposition (research surveys, etc.)
- 01-06 Collections of papers; proceedings of conferences
- 01A05 General histories, source books
- 01A10 Primitive
- 01A15 Pre-Greek, Babylonian, Egyptian
- 01A20 Greek
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- 01A35 Medieval
- 01A40 15th and 16th centuries, Renaissance
- 01A45 17th century
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- 01A55 19th century
- 01A60 20th century
- 01A65 Contemporary
- 01A70 Biographies, obituaries, personalia
- 01A75 Collected or selected works; reprintings or translations of classics
- 01A99 Miscellaneous topics

02-XX LOGIC AND FOUNDATIONS

- 02-01 Elementary exposition (collegiate level)
- 02-02 Advanced exposition (research surveys, etc.)
- 02-03 Historical
- 02-04 Explicit machine computation and programs (not the theory of computation or programming)
- 02-06 Collections of papers; proceedings of conferences
- 02A05 Philosophical and critical
- 02Bxx Classical logical systems
 - 02B05 Propositional calculus
 - 02B10 Predicate calculus
 - 02B15 Higher order predicate calculus
 - 02B20 Unusual quantifiers
 - 02B25 Infinitely long sentences
 - 02B99 None of the above, but in this section
- 02Cxx Nonclassical formal systems
 - 02C05 Many-valued logic
 - 02C10 Modal logic, etc.
 - 02C15 Formalizations of intuitionism, etc.
 - 02C20 Combinatory logic
 - 02C99 None of the above, but in this section
- 02Dxx Proof theory [For theorem proving by machines, see 68A40.]
 - 02D05 Proof-theoretic ordinals
 - 02D99 Other proof theory
- 02Exx Constructive mathematics
 - 02E05 Intuitionistic mathematics
 - 02E10 Algorithms
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 - 02E99 None of the above, but in this section
- 02Fxx Recursion theory
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 - 02F10 Automata [See also 18B20, 68A25, 94A30, 94A35.]

- 02F15 Turing machines
- 02F20 Classification of recursive functions
- 02F25 Recursively enumerable sets
- 02F27 Recursion theory on ordinals and sets and other abstract structures
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- 02F99 None of the above, but in this section

02Gxx Methodology of deductive systems

- 02G05 Decidability and undecidability
- 02G10 Axiomatizability
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- 02G20 Completeness, categoricity, etc.
- 02G99 None of the above, but in this section

02Hxx Model theory

- 02H05 Models for theories in classical predicate calculus
- 02H10 Models for other theories
- 02H13 Model constructions
- 02H15 Applications to algebra, number theory, etc. [See also 13L05.]
- 02H20 Nonstandard models
- 02H25 Applications of nonstandard models [See also 10N15, 12L15, 26A98, 30A91.]
- 02H99 None of the above, but in this section

02Jxx Algebraic logic

- 02J05 Boolean algebras, lattices, topologies [See also 06A40.]
- 02J10 Algebra of relations
- 02J15 Cylindric and polyadic algebras
- 02J99 None of the above, but in this section

02Kxx Set theory

- 02K05 Consistency and independence results
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- 02K20 Axiom of choice and equivalent propositions (Zorn's Lemma, etc.) [See also 04A25.]
- 02K25 Continuum hypothesis, generalized continuum hypothesis [See also 04A30.]
- 02K30 Descriptive set theory; Borel classifications, Suslin schemes, etc. [See also 04A15, 28A05, 54H05.]
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- 02K99 None of the above, but in this section

04-XX SET THEORY

- 04-01 Elementary exposition (collegiate level)
- 04-02 Advanced exposition (research surveys, etc.)
- 04-03 Historical
- 04-04 Explicit machine computation and programs (not the theory of computation or programming)
- 04-06 Collections of papers; proceedings of conferences
- 04A05 Relations, functions [See also 08A05.]
- 04A10 Transfinite numbers
- 04A15 Descriptive set theory; Borel classifications, Suslin schemes, etc. [See also 02K30, 28A05, 54H05.]
- 04A20 Combinatorial [See also 05A05.]
- 04A25 Axiom of choice and equivalent propositions (Zorn's Lemma, etc.) [See also 02K20.]
- 04A30 Continuum hypothesis, generalized continuum hypothesis [See also 02K25.]
- 04A99 Miscellaneous topics

05-XX COMBINATORICS [For finite fields, see 12Cxx.]

- 05-01 Elementary exposition (collegiate level)
- 05-02 Advanced exposition (research surveys, etc.)
- 05-03 Historical
- 05-04 Explicit machine computation and programs (not the theory of computation or programming)
- 05-06 Collections of papers; proceedings of conferences
- 05Axx Classical combinatorial problems**
- 05A05 Combinatorial choice problems; subsets, representatives
- 05A10 Factorials, binomial coefficients, combinatorial functions
- 05A15 Combinatorial enumeration problems, generating functions
- 05A17 Partitions [See also 10A45.]
- 05A19 Combinatorial identities
- 05A20 Combinatorial inequalities
- 05A99 None of the above, but in this section
- 05Bxx Designs and configurations**
- 05B05 Block designs [See also 62K10.]
- 05B10 Difference sets (number-theoretic, group-theoretic, etc.)
- 05B15 Orthogonal arrays, Latin squares
- 05B20 Matrices (incidence, Hadamard, etc.)
- 05B25 Finite geometries
- 05B30 Other designs, configurations
- 05B35 Matroids, geometric lattices
- 05B40 Packing and covering [See also 10E30, 52A45.]
- 05B45 Tessellation and tiling problems
- 05B99 None of the above, but in this section
- 05Cxx Graph theory [For applications of graphs, see 94A20.]**
- 05C05 Trees
- 05C10 Topological graph theory, embedding [See also 55A15, 55A25.]
- 05C15 Chromatic theory of graphs and maps
- 05C20 Directed graphs (digraphs)
- 05C25 Graphs and groups
- 05C30 Enumeration of graphs and maps
- 05C35 Paths and extremal problems
- 05C99 None of the above, but in this section

06-XX ORDER, LATTICES, ORDERED ALGEBRAIC STRUCTURES

- 06-01 Elementary exposition (collegiate level)
- 06-02 Advanced exposition (research surveys, etc.)
- 06-03 Historical
- 06-04 Explicit machine computation and programs (not the theory of computation or programming)
- 06-06 Collections of papers; proceedings of conferences
- 06A05 Total order
- 06A10 Partial order
- 06A15 Galois correspondence, closure operators
- 06A20 Lattices, semi-lattices, generalizations
- 06A23 Complete lattices
- 06A25 Complemented lattices, generalizations
- 06A30 Modular lattices, continuous geometries, generalizations [See also 16A30.]
- 06A35 Distributive lattices, generalizations
- 06A40 Boolean algebras and rings [See also 02J05, 16A30, 16A32.]
- 06A45 Order topologies [See also 54F05.]
- 06A50 Ordered semigroups, other generalizations of groups
- 06A55 Ordered groups
- 06A60 Ordered abelian groups
- 06A65 Ordered linear spaces [See also 46A40.]
- 06A70 Ordered rings, algebras, modules [For ordered fields, see 10M15, 12J15.]
- 06A75 Other ordered algebraic structures

08-XX GENERAL MATHEMATICAL SYSTEMS

- 08A05 Structure of general algebras and relational systems [For topological representations, see 54H10.]
- 08A10 Free algebras, sums, products, limits, colimits
- 08A15 Varieties of algebras and generalizations
- 08A20 Axiomatic model classes
- 08A25 Universal algebra

10-XX NUMBER THEORY [Excluding 10Axx and 10Mxx, this classification scheme does not distinguish work in the rational number fields from that in other algebraic number fields.]

- 10-01 Elementary exposition (collegiate level)
- 10-02 Advanced exposition (research surveys, etc.)
- 10-03 Historical
- 10-04 Explicit machine computation and programs (not the theory of computation or programming)
- 10-06 Collections of papers; proceedings of conferences
- 10Axx Elementary number theory [For analogues in number fields, see 12A05.]**
- 10A05 Multiplicative structure of the integers (GCD, etc.)
- 10A10 Congruences, primitive roots
- 10A15 Power residues, reciprocity
- 10A20 Number-theoretic functions, related numbers; inversion formulas
- 10A25 Elementary prime number theory, factorization
- 10A30 Algorithms and expansions, digital properties [Approximation results in 10F20; metric results in 10K10.]
- 10A35 Recurrence sequences
- 10A40 Special numbers, sequences and polynomials (e.g. Bernoulli)
- 10A45 Partitions
- 10A99 None of the above, but in this section
- 10Bxx Diophantine equations [For all papers involving algebro-geometric methods, see 14Gxx.]**
- 10B05 Linear, quadratic and bilinear equations
- 10B10 Cubic and quartic equations
- 10B15 Higher degree equations
- 10B20 Multiplicative equations
- 10B25 Nonpolynomial equations
- 10B30 Equations in sufficiently many variables [See also 10J10.]
- 10B35 Representation problems [See also 10J10.]
- 10B40 p -adic and power series fields
- 10B45 Diophantine inequalities
- 10B99 None of the above, but in this section
- 10Cxx Forms**
- 10C05 Quadratic and Hermitian forms [See also 10E25.]
- 10C10 Higher degree forms
- 10C15 Analytic theory
- 10C20 p -adic theory
- 10C25 Minima of forms [See also 10E20.]
- 10C30 Arithmetic properties of classical groups [See also 20Gxx.]
- 10C99 None of the above, but in this section
- 10Dxx Automorphic theory**
- 10D05 Modular functions and groups
- 10D10 Automorphic functions, one variable
- 10D15 Automorphic forms, one variable
- 10D20 Automorphic theory, several variables
- 10D25 Complex multiplication [See also 14K22.]
- 10D99 None of the above, but in this section
- 10Exx Geometry of numbers**
- 10E05 Lattices and convex bodies [See also 10J25.]
- 10E10 Nonconvex bodies
- 10E15 Products of linear forms
- 10E20 Minima of forms
- 10E25 Quadratic forms (reduction, extreme forms, etc.)
- 10E30 Lattice packing and covering [See also 05B40, 52A45.]
- 10E35 Mean value theorems
- 10E40 Transfer theorems
- 10E45 Automorphism groups of lattices
- 10E99 None of the above, but in this section
- 10Fxx Diophantine approximation [See also 10K15.]**
- 10F05 Approximation to one number
- 10F10 Simultaneous approximation
- 10F15 Nonhomogeneous approximation
- 10F20 Continued fractions and generalizations [See also 10A30.]
- 10F25 Approximation to algebraic numbers
- 10F30 Approximation by numbers from a fixed field
- 10F35 Irrationality and transcendence
- 10F40 Distribution modulo one [See also 10K05.]

- 10F45 Approximation in non-Archimedean valuations
 10F99 None of the above, but in this section
- 10G05 Exponential sums, character sums**
- 10Hxx Multiplicative theory**
 10H05 Riemann zeta-function
 10H10 Other zeta-functions, L -functions [For local and global ground fields, see 12A70, 12A80, 12B30, 12B35; for algebro-geometric methods, see 14G10.]
 10H15 Distribution of primes and of integers with specified multiplicative properties
 10H20 Distribution in progressions and other sequences
 10H25 Asymptotic results on arithmetic functions
 10H30 Sieves
 10H35 Distribution of residue classes (primitive roots, power residues, etc.)
 10H40 Generalized primes and integers
 10H99 None of the above, but in this section
- 10Jxx Additive theory**
 10J05 Sums of squares
 10J10 Applications of Hardy-Littlewood method [See also 10B35.]
 10J15 Additive questions involving primes
 10J20 Analytic work on partitions [See also 10A45.]
 10J25 Lattice points in large regions
 10J99 None of the above, but in this section
- 10Kxx Probabilistic theory; measure, dimension, etc.**
 10K05 Distribution modulo one
 10K10 Algorithms and expansions
 10K15 Diophantine approximation [See also 10Fxx.]
 10K20 Arithmetic functions
 10K25 Normal numbers
 10K30 Irregularities of distribution
 10K35 Harmonic analysis and almost periodicity
 10K40 Non-Archimedean theory
 10K99 None of the above, but in this section
- 10Lxx Sequences of integers**
 10L05 Addition of sequences
 10L10 Special sequences (density, etc.)
 10L15 Representation functions
 10L99 None of the above, but in this section
- 10Mxx Rational arithmetic of algebraic objects**
 10M05 Polynomials [See also 13F20.]
 10M10 Valued fields
 10M15 Ordered fields
 10M20 Matrices [See also 15A36.]
 10M99 None of the above, but in this section
- 10Nxx Connections with logic**
 10N05 Decidability
 10N10 Ultraproducts
 10N15 Nonstandard arithmetic [See also 02H25.]
 10N99 None of the above, but in this section
- 12-XX ALGEBRAIC NUMBER THEORY, FIELD THEORY AND POLYNOMIALS**
- 12-01 Elementary exposition (collegiate level)
 12-02 Advanced exposition (research surveys, etc.)
 12-03 Historical
 12-04 Explicit machine computation and programs (not the theory of computation or programming)
 12-06 Collections of papers; proceedings of conferences
- 12Axx Algebraic number theory: global fields [For complex multiplication, see 10D25.]**
 12A05 Analogues in number fields of elementary number theory
 12A10 Characterizations of algebraic numbers and algebraic functions
 12A15 Special algebraic numbers (PV numbers, etc.)
 12A20 Polynomials (irreducibility, etc.)
 12A25 Quadratic fields
 12A30 Cubic and quartic fields
 12A35 Abelian and metabelian extensions (including cyclotomic, Kummer, cyclic)
 12A40 Other number fields
 12A45 Units and factorization
 12A50 Class number, discriminant
 12A55 Galois theory
 12A60 Galois cohomology
 12A65 Class field theory
 12A70 Zeta-functions and L -functions of number fields [See also 10H10.]
 12A75 Density theorems
 12A80 Arithmetic and zeta-functions of algebras
 12A85 Analysis in adèle rings and groups
 12A90 Arithmetic theory of algebraic function fields [See also 14-XX.]
 12A95 Totally real and totally positive fields
 12A99 None of the above, but in this section
- 12Bxx Algebraic number theory: local and p -adic fields**
 12B05 Polynomials
 12B10 Ramification and extension theory
 12B15 Galois theory
 12B20 Galois cohomology
 12B25 Class field theory
 12B30 Zeta- and L -functions [See also 10H10.]
 12B35 Arithmetic and zeta-functions of algebras
 12B40 Other analytic theory
 12B99 None of the above, but in this section
- 12Cxx Finite fields and finite commutative rings**
 12C05 Polynomials
 12C10 Linear sequences
 12C15 Arithmetic
 12C20 Cyclotomy
 12C25 Exponential sums
 12C30 Structure theory
 12C99 None of the above, but in this section
- 12Dxx Real and complex fields**
 12D05 Polynomials: factorization
 12D10 Polynomials: location of zeros [Algebraic theorems; for the analytic theory, see 26A78, 30A08.]
 12D15 Formally real fields
 12D99 None of the above, but in this section
- 12Exx General field theory**
 12E05 Polynomials (irreducibility, etc.)
 12E10 Special polynomials
 12E99 None of the above, but in this section
- 12Fxx Field extensions**
 12F05 Algebraic extensions
 12F10 Separable extensions, Galois theory
 12F15 Inseparable extensions, derivations
 12F20 Transcendental extensions
 12F99 None of the above, but in this section
- 12Gxx Homological methods**
 12G05 Galois cohomology [See also 12A60, 18H10.]
 12G10 Cohomological dimension
 12G99 None of the above, but in this section
- 12Hxx Differential and difference algebra**
 12H05 Differential algebra
 12H10 Difference algebra
- 12Jxx Topological fields**
 12J05 Normed fields
 12J10 Valued fields
 12J15 Ordered fields
 12J20 General valuation theory
 12J99 None of the above, but in this section
- 12K05 Near-fields and other generalizations**
- 12Lxx Connections with logic**
 12L05 Decidability
 12L10 Ultraproducts
 12L15 Nonstandard arithmetic [See also 02H25.]
 12L99 None of the above, but in this section
- 13-XX COMMUTATIVE RINGS AND ALGEBRAS [For finite commutative rings, see 12Cxx.]**
 13-01 Elementary exposition (collegiate level)
 13-02 Advanced exposition (research surveys, etc.)

- 13-03 Historical
- 13-04 Explicit machine computation and programs (not the theory of computation or programming)
- 13-06 Collections of papers; proceedings of conferences
- 13Axx General commutative ring theory**
 - 13A05 Divisibility
 - 13A10 Radical theory
 - 13A15 Ideals, prime ideals, valuations and generalizations
 - 13A20 Brauer group [See also 16A16.]
 - 13A99 None of the above, but in this section
- 13Bxx Ring extensions and related topics**
 - 13B05 Galois theory
 - 13B10 Automorphisms and derivations
 - 13B15 Ramification theory
 - 13B20 Integral dependence; integral closure; integrally closed rings, related rings (Japanese, etc.)
 - 13B25 Polynomials over commutative rings
 - 13B99 None of the above, but in this section
- 13Cxx Theory of modules and ideals**
 - 13C05 Structure, classification theorems
 - 13C10 Special types (projective, injective, free, flat, torsion, reflexive, etc.) [See also 18G05.]
 - 13C15 Dimension theory, depth, related rings (catenary, etc.)
 - 13C99 None of the above, but in this section
- 13Dxx Homological methods [For cohomology of rings and algebras, see 18H20.]**
 - 13D05 Homological dimension
 - 13D10 Deformations and infinitesimal methods
 - 13D15 Class group, Grothendieck group, K -theory [See also 18F25.]
 - 13D99 None of the above, but in this section
- 13Exx Chain conditions**
 - 13E05 Noetherian rings
 - 13E10 Artinian rings, finite dimensional algebras
 - 13E99 None of the above, but in this section
- 13Fxx Arithmetic rings**
 - 13F05 Dedekind and Prüfer rings and their generalizations
 - 13F10 Principal ideal rings
 - 13F15 Factorial rings, unique factorization domains
 - 13F20 Polynomial rings [See also 10M05.]
 - 13F99 None of the above, but in this section
- 13G05 Integral domains**
- 13Hxx Local rings and semilocal rings**
 - 13H05 Regular local rings
 - 13H10 Special types (Macaulay, Gorenstein, etc.)
 - 13H15 Multiplicity theory and related topics
 - 13H99 None of the above, but in this section
- 13Jxx Topological rings [For ordered rings, see 06A70; see also 16A80.]**
 - 13J05 Power series rings
 - 13J10 Complete rings
 - 13J15 Henselian rings
 - 13J20 Global topological rings
 - 13J99 None of the above, but in this section
- 13K05 Witt vectors and related rings**
- 13L05 Applications of logic to commutative algebra**
- 14-XX ALGEBRAIC GEOMETRY**
 - 14-01 Elementary exposition (collegiate level)
 - 14-02 Advanced exposition (research surveys, etc.)
 - 14-03 Historical
 - 14-04 Explicit machine computation and programs (not the theory of computation or programming)
 - 14-06 Collections of papers; proceedings of conferences
- 14Axx Foundations**
 - 14A05 Relevant commutative algebra [See also 13-XX.]
 - 14A10 Varieties
 - 14A15 Schemes
 - 14A20 Generalizations (algebraic spaces, motifs)
 - 14A25 Elementary questions
 - 14A99 None of the above, but in this section
- 14Bxx Local theory**
 - 14B05 Singularities [See also 14E15.]
 - 14B10 Infinitesimal methods
 - 14B15 Local cohomology [See also 18H20.]
 - 14B20 Formal neighborhoods
 - 14B99 None of the above, but in this section
- 14Cxx Cycles and subschemes**
 - 14C05 Parametrization (Chow and Hilbert schemes)
 - 14C10 Equivalence relations
 - 14C15 Rational equivalence rings, intersection theory
 - 14C20 Divisors, linear systems, Picard groups
 - 14C25 Zero-cycles
 - 14C30 Transcendental methods, Hodge theory
 - 14C99 None of the above, but in this section
- 14Dxx Families, fibrations**
 - 14D05 Structure of families (Picard-Lefschetz, Picard-Fuchs theory, etc.)
 - 14D10 Arithmetic ground fields (finite, local, global)
 - 14D15 Formal methods; deformations [See also 32Gxx.]
 - 14D20 Algebraic moduli problems [For analytic moduli problems, see 32G13.]
 - 14D99 None of the above, but in this section
- 14Exx Mappings and correspondences**
 - 14E05 Rational maps, birational correspondences
 - 14E10 General correspondences
 - 14E15 Global theory of singularities, resolution
 - 14E20 Coverings, fundamental group
 - 14E25 Embeddings
 - 14E35 Results in dimension ≤ 3
 - 14E99 None of the above, but in this section
- 14Fxx Cohomology theory [See also 13Dxx, 18-XX.]**
 - 14F05 Vector bundles, sheaves, related constructions
 - 14F10 Differentials and other special sheaves
 - 14F15 Serre cohomology, K -theory [See also 13D15, 18F25.]
 - 14F20 Grothendieck cohomology and topology
 - 14F25 Classical real and complex cohomology
 - 14F30 p -adic cohomology
 - 14F35 Homotopy theory
 - 14F99 None of the above, but in this section
- 14Gxx Arithmetic problems [For complex multiplication, see 10D25, 14K22.]**
 - 14G05 Rationality questions
 - 14G10 Zeta-functions and related questions
 - 14G13 Weil-Tate conjectures
 - 14G15 Finite ground fields
 - 14G20 p -adic ground fields (local fields)
 - 14G25 Global ground fields
 - 14G99 None of the above, but in this section
- 14Hxx Curves**
 - 14H05 Algebraic function fields
 - 14H10 Families, moduli (algebraic)
 - 14H15 Families, moduli (analytic) [See also 32G13.]
 - 14H20 Singularities, local rings
 - 14H25 Arithmetic ground fields
 - 14H30 Coverings, fundamental group
 - 14H35 Correspondences
 - 14H40 Jacobians [See also 32G20.]
 - 14H45 Special curves
 - 14H99 None of the above, but in this section
- 14Jxx Surfaces and 3-dimensional varieties**
 - 14J05 Picard group
 - 14J10 Families, moduli, classification: algebraic theory
 - 14J15 Singularities, moduli, classification: analytic theory [See also 32J15.]
 - 14J20 Arithmetic ground fields
 - 14J25 Special surfaces
 - 14J99 None of the above, but in this section
- 14Kxx Abelian varieties and schemes**
 - 14K05 Algebraic theory
 - 14K10 Algebraic moduli, classification
 - 14K15 Arithmetic ground fields
 - 14K20 Analytic theory

- 14K22 Complex multiplication [See also 10D25.]
 14K25 ϑ -functions
 14K30 Picard schemes, higher Jacobians
 14K99 None of the above, but in this section
- 14Lxx Group schemes [For linear algebraic groups, see 20Gxx.]**
 14L05 Formal groups, p -divisible groups
 14L10 Group varieties
 14L15 Group schemes
 14L20 Finite group schemes
 14L25 Pro-algebraic group schemes
 14L99 None of the above, but in this section
- 14Mxx Special varieties**
 14M05 Varieties defined by ring conditions (factorial, Macaulay)
 14M10 Complete intersections
 14M15 Grassmannians, homogeneous spaces
 14M20 Rational varieties
 14M99 None of the above, but in this section
- 14Nxx Classical methods and problems**
 14N05 Projective techniques
 14N10 Enumerative problems
 14N99 None of the above, but in this section
- 15-XX LINEAR AND MULTILINEAR ALGEBRA; MATRIX THEORY (finite and infinite)**
 15-01 Elementary exposition (collegiate level)
 15-02 Advanced exposition (research surveys, etc.)
 15-03 Historical
 15-04 Explicit machine computation and programs (not the theory of computation or programming)
 15-06 Collections of papers; proceedings of conferences
 15A03 Vector spaces, linear dependence, rank
 15A06 Linear equations
 15A09 Matrix inversion, generalized inverses
 15A12 Conditioning of matrices [See also 65F35.]
 15A15 Determinants, permanents, other special matrix functions
 15A18 Eigenvalues and eigenvectors
 15A21 Canonical forms, reductions, classification
 15A24 Matrix equations and identities
 15A27 Commutativity
 15A30 Algebraic systems of matrices [See also 16A42, 20Gxx, 20Hxx.]
 15A33 Matrices over special rings (quaternions, finite fields, etc.)
 15A36 Matrices of integers [See also 10M20.]
 15A39 Linear inequalities
 15A42 Inequalities involving eigenvalues and eigenvectors
 15A45 Miscellaneous inequalities involving matrices
 15A48 Positive matrices and their generalizations
 15A51 Stochastic matrices
 15A54 Matrices over function rings in one or more variables
 15A57 Other types of matrices (Hermitian, skew-Hermitian, etc.)
 15A60 Norms of matrices, applications of functional analysis to matrix theory [See also 65F35, 65J05.]
 15A63 Quadratic and bilinear forms, inner products
 15A66 Clifford algebras
 15A69 Multilinear algebra, tensor products
 15A72 Vector and tensor algebra, theory of invariants
 15A75 Exterior algebra, Grassmann algebras
 15A78 Other algebras built from modules
 15A99 Miscellaneous topics
- 16-XX ASSOCIATIVE RINGS AND ALGEBRAS [For the commutative case, see 13-XX.]**
 16-01 Elementary exposition (collegiate level)
 16-02 Advanced exposition (research surveys, etc.)
 16-03 Historical
 16-04 Explicit machine computation and programs (not the theory of computation or programming)
 16-06 Collections of papers; proceedings of conferences
 16A02 Integral domains, unique factorization domains (noncommutative)
 16A04 Noncommutative principal ideal rings, rings with a division algorithm
 16A06 Free algebras, free ideal rings (firs) and their generalizations [See also tensor algebra in 15A72.]
 16A08 Rings of quotients, noncommutative localization
 16A10 Noncommutative local rings
 16A12 Prime and semiprime rings
 16A14 Noncommutative analogues of Dedekind and Prüfer domains
 16A16 Separable algebras, Azumaya algebras and their generalizations [See also 13A20.]
 16A18 Orders, arithmetic in algebras
 16A20 Primitive and semiprimitive rings
 16A21 Radical theory
 16A22 Nil, nilpotent and radical rings
 16A24 Hopf algebras, algebraic theory [See also 57F05.]
 16A26 Group rings [See also 20C05.]
 16A28 Rings with involution [See also 46Kxx.]
 16A30 von Neumann regular rings and their generalizations [See also 06A30.]
 16A32 Idempotents in rings
 16A34 Rings with annihilator conditions
 16A36 Frobenius algebras, quasi-Frobenius rings and their generalizations
 16A38 Rings with polynomial identity
 16A40 Division rings, simple and semisimple Artinian rings
 16A42 Rings of linear transformations, matrix rings, infinite matrix rings
 16A44 Finite rings [See also 12Cxx.]
 16A46 Chain conditions; finite dimensional algebras, Artinian rings, Noetherian rings
 16A48 Structure, classification
 16A49 Duality theory
 16A50 Projective and flat modules and generalizations
 16A52 Injective modules, self-injective rings and generalizations
 16A54 Grothendieck groups of rings, K -theory of noncommutative rings [See also 18F25.]
 16A56 Extension theory
 16A58 Deformation theory of rings and algebras [See also 13D10, 32Gxx.]
 16A60 Homological dimension
 16A62 Homological methods [For cohomology of algebras and rings, see 18H15.]
 16A64 Modules and representations
 16A66 Ideal theory, prime ideals and their generalizations
 16A68 Lie, Jordan and other nonassociative structures on associative rings
 16A70 Commutativity theorems
 16A72 Automorphisms, derivations
 16A74 Galois theory
 16A76 Near rings
 16A78 Semirings and other generalizations of rings
 16A80 Topological rings and semirings [For ordered rings, see 06A70; see also 13Jxx.]
 16A99 Miscellaneous topics
- 17-XX NONASSOCIATIVE RINGS AND ALGEBRAS**
 17-01 Elementary exposition (collegiate level)
 17-02 Advanced exposition (research surveys, etc.)
 17-03 Historical
 17-04 Explicit machine computation and programs (not the theory of computation or programming)
 17-06 Collections of papers; proceedings of conferences
 17Axx **General nonassociative algebras**
 17A05 Power-associative
 17A10 Commutative power-associative
 17A15 Noncommutative Jordan algebras
 17A20 Flexible algebras
 17A25 Nodal algebras
 17A30 Algebras satisfying other identities
 17A99 None of the above, but in this section
 17Bxx **Lie algebras [For Lie groups, see 22Exx.]**
 17B05 Structure theory
 17B10 Representations, algebraic theory (weights)
 17B15 Representations, analytic theory
 17B20 Simple, semisimple, reductive algebras (roots)
 17B25 Exceptional algebras

- 17B30 Solvable, nilpotent algebras
- 17B35 Universal enveloping algebras
- 17B40 Automorphisms, derivations, other operators
- 17B45 Lie algebras of linear algebraic groups [See also 14Lxx and 20Gxx.]
- 17B50 Lie p -algebras and bialgebras (Hopf algebras) of formal groups [See also 14L05, 16A24.]
- 17B55 Homological methods in Lie algebras [For homology of Lie algebras, see 18H25.]
- 17B60 Lie rings associated with other structures (associative, Jordan, etc.) [See also 15A30, 16A68, 17C40, 17C50.]
- 17B65 Infinite dimensional Lie algebras [See also 22E65.]
- 17B99 None of the above, but in this section
- 17Cxx Jordan algebras (commutative)**
 - 17C05 Identities
 - 17C10 Structure theory
 - 17C15 Representations
 - 17C20 Simple, semisimple algebras
 - 17C25 Universal enveloping algebras
 - 17C30 Automorphisms, derivations, other operators
 - 17C35 Formally real domains of positivity [See also 32Nxx.]
 - 17C40 Exceptional Jordan algebras and associated Lie groups
 - 17C45 Homological methods in Jordan algebras [For homology of Jordan algebras, see 18H30.]
 - 17C50 Jordan rings associated with other structures [See also 16A68, 17B60.]
 - 17C99 None of the above, but in this section
- 17D05 Alternative rings**
- 17E05 Other nonassociative rings and algebras**
- 18-XX CATEGORY THEORY, HOMOLOGICAL ALGEBRA**
 - 18-01 Elementary exposition (collegiate level)
 - 18-02 Advanced exposition (research surveys, etc.)
 - 18-03 Historical
 - 18-06 Collections of papers; proceedings of conferences
- 18Axx General theory of categories and functors**
 - 18A05 Definitions, generalizations
 - 18A10 Graphs, groupoids, neofunctors [See also 20Lxx.]
 - 18A15 Foundations, relations to logic and deductive systems [See also 02-XX.]
 - 18A20 Epimorphisms, monomorphisms, special classes of morphisms, null morphisms, factorization (bicategories)
 - 18A25 Functor categories, comma categories
 - 18A30 Limits and colimits (products, sums, pushouts, fiber products, equalizers, kernels, ends and coends, etc.)
 - 18A35 Complete categories, completions
 - 18A40 Adjoint functors (representable functors, universal constructions, reflexive subcategories, etc.), constructions of adjoints (Kan extensions, etc.)
 - 18A99 None of the above, but in this section
- 18Bxx Special categories**
 - 18B05 Category of sets, characterizations
 - 18B10 Category of relations, additive relations, semigroups [See also 20Mxx.]
 - 18B15 Embedding theorems, universal categories [See also 18E20.]
 - 18B20 Categories of machines, automata, operative categories [See also 02F10, 68A25, 94A30, 94A35.]
 - 18B99 None of the above, but in this section
- 18Cxx Categories and algebraic theories**
 - 18C05 Equational categories [See also 02-XX.]
 - 18C10 Theories (e.g. algebraic theories), structure, and semantics
 - 18C15 Triples (= standard construction, monad or triad), algebras for a triple, homology and derived functors for triples [See also 18Gxx.]
 - 18C99 None of the above, but in this section
- 18Dxx Categories with structure**
 - 18D05 Double categories, 2-categories, bicategories, hypercategories
 - 18D10 Monoidal categories (= multiplicative categories)
 - 18D15 Closed categories (closed monoidal and Cartesian closed categories, etc.)
 - 18D20 Enriched categories (over closed or monoidal categories)
- 18D25 Strong functors, strong adjunctions
- 18D30 Fibered categories
- 18D35 Structured objects in a category (group objects, etc.)
- 18D99 None of the above, but in this section
- 18Exx Abelian categories**
 - 18E05 Preadditive, additive categories
 - 18E10 Exact categories, abelian categories
 - 18E15 Grothendieck categories
 - 18E20 Embedding theorems [See also 18B15.]
 - 18E25 Derived functors and satellites
 - 18E30 Derived categories, triangulated categories
 - 18E35 Localization of categories
 - 18E40 Torsion theories, radicals
 - 18E99 None of the above, but in this section
- 18Fxx Categories and geometry**
 - 18F05 Local categories and functors
 - 18F10 Grothendieck topologies [See also 14F20.]
 - 18F15 Abstract manifolds and fiber bundles [See also 55Fxx, 57Bxx.]
 - 18F20 Presheaves and sheaves [See also 14F05, 32C35, 32L10, 55B30.]
 - 18F25 Algebraic K -theory [See also 13D15, 14F15, 16A54.]
 - 18F30 Grothendieck groups [See also 13D15, 16A54.]
 - 18F99 None of the above, but in this section
- 18Gxx Homological algebra**
 - 18G05 Projectives and injectives [See also 13C10, 16A50, 16A52.]
 - 18G10 Resolutions; derived functors [See also 18E25.]
 - 18G15 Ext and Tor, generalizations, Künneth formula [See also 55J25.]
 - 18G20 Homological dimension [See also 13Dxx, 16A62.]
 - 18G25 Relative homological algebra, projective classes
 - 18G30 Simplicial sets, simplicial objects (in a category) [See also 55J10.]
 - 18G35 Chain complexes [See also 18E30, 55J15.]
 - 18G40 Spectral sequences, hypercohomology [See also 55Hxx.]
 - 18G99 None of the above, but in this section
- 18Hxx Cohomology of specified algebraic systems**
 - 18H05 General methods; models [See also 18E25, 18G25.]
 - 18H10 Cohomology and homology of groups [See also 20Jxx.]
 - 18H15 Cohomology and homology of algebras and rings [See also 16A62.]
 - 18H20 Cohomology and homology of commutative rings [See also 13Dxx.]
 - 18H25 Cohomology of Lie algebras [See also 17B55.]
 - 18H30 Cohomology of Jordan algebras [See 17C45.]
 - 18H35 Cohomology of other nonassociative algebras [See 17-XX.]
 - 18H40 Cohomology of other algebraic systems
 - 18H99 None of the above, but in this section
- 20-XX GROUP THEORY AND GENERALIZATIONS [For ordered groups, see 06A55.]**
 - 20-01 Elementary exposition (collegiate level)
 - 20-02 Advanced exposition (research surveys, etc.)
 - 20-03 Historical
 - 20-04 Explicit machine computation and programs (not the theory of computation or programming)
 - 20-06 Collections of papers; proceedings of conferences
- 20Axx Foundations**
 - 20A05 Axiomatics and elementary properties
 - 20A10 Metamathematical considerations [For word problems, see 20F10.]
 - 20A99 None of the above, but in this section
- 20Bxx Finite permutation groups**
 - 20B05 General theory
 - 20B10 Characterization theorems
 - 20B15 Uniprimitive groups
 - 20B20 Multiply transitive groups
 - 20B25 Automorphism groups of algebraic, geometric, or combinatorial structures [See also 05Bxx, 20G40, 20H30, 50-XX.]
 - 20B99 None of the above, but in this section

- 20Cxx Representation theory of finite groups**
 20C05 Group rings and their modules [See also 16A26.]
 20C10 Integral representations
 20C15 Ordinary representations and characters
 20C20 Modular representations and characters
 20C25 Projective representations and multipliers
 20C30 Representations of symmetric groups and other special groups
 20C35 Applications to physics
 20C99 None of the above, but in this section
- 20Dxx Abstract finite groups**
 20D05 Simple groups [See also 20G40.]
 20D10 Solvable groups
 20D15 Nilpotent groups, p -groups
 20D20 Sylow subgroups, π -groups
 20D25 Special subgroups (Frattni, Fitting, etc.)
 20D30 Series and lattices of subgroups
 20D35 Subnormal subgroups
 20D40 Products of subgroups
 20D45 Automorphisms
 20D99 None of the above, but in this section
- 20Exx Infinite groups**
 20E05 Free nonabelian groups
 20E10 Varieties of groups
 20E15 Chains of subgroups (solvable groups, nilpotent groups, etc.)
 20E20 Special subgroups other than commutator types
 20E25 Local properties, residual properties
 20E30 Free products, generalized properties
 20E35 Representation in associative rings, Lie rings, combinatorial structures, etc.
 20E40 Fundamental groups, etc. [See also 55A05, 57Exx.]
 20E99 None of the above, but in this section
- 20Fxx General groups, finite or infinite**
 20F05 Generators and relations
 20F10 Word problems
 20F15 Structure theorems
 20F20 Limits, profinite groups
 20F25 Extensions, wreath products, other compositions
 20F30 Subgroup lattices, maximal subgroups, subnormal subgroups, etc.
 20F35 Commutator subgroups and their generalizations
 20F40 Associated Lie structures
 20F45 Engel conditions
 20F50 Periodic groups
 20F55 Automorphisms
 20F99 None of the above, but in this section
- 20Gxx Linear algebraic groups (classical groups) [See also 10C30, 14-XX; for analytic methods on p -adic groups and adèle groups, see 22E55.]**
 20G05 Representation theory [For infinite dimensional representations, see 22E50.]
 20G10 Cohomology theory
 20G15 Linear algebraic groups over arbitrary fields
 20G20 Linear algebraic groups over the reals, the complexes, the quaternions
 20G25 Linear algebraic groups over local fields and their integers
 20G30 Linear algebraic groups over global fields and their integers
 20G35 Linear algebraic groups over adèles and other rings and schemes
 20G40 Linear algebraic groups over finite fields
 20G45 Applications to physics; explicit representations
 20G99 None of the above, but in this section
- 20Hxx Other groups of matrices**
 20H05 Unimodular groups, congruence subgroups
 20H10 Fuchsian groups and their generalizations [See also 30A58, 32Nxx.]
 20H15 Other geometric groups, including crystallographic groups [See also 50-XX.]
 20H20 Other matrix groups over fields
 20H25 Other matrix groups over rings
- 20H30 Other matrix groups over finite fields
 20H99 None of the above, but in this section
- 20Jxx Connections with homological algebra and category theory**
 20J05 Homological methods in group theory
 20J10 Groups arising as cohomology groups
 20J15 Category of groups
 20J99 None of the above, but in this section
- 20Kxx Abelian groups**
 20K05 Finitely generated groups
 20K10 Torsion groups
 20K15 Torsion free groups, finite rank
 20K20 Torsion free groups, infinite rank
 20K25 Direct sums, direct products, etc.
 20K30 Automorphisms, homomorphisms, endomorphisms
 20K35 Extensions
 20K40 Homological and categorical methods [See also 18H10.]
 20K45 Topological methods
 20K99 None of the above, but in this section
- 20Lxx Groupoids (small categories in which all morphisms are isomorphisms)**
 20L05 General theory
 20L10 Connections with group theory
 20L15 Connections with topology
 20L99 None of the above, but in this section
- 20Mxx Semigroups**
 20M05 Free semigroups, generators and relations, word problem
 20M10 Structure theory, ideals, idempotents, etc.
 20M15 Mappings of semigroups
 20M20 Semigroups of transformations, etc. [See also 47D05.]
 20M25 Semigroup rings, multiplicative semigroups of rings
 20M30 Representation of semigroups
 20M35 Semigroups in automata theory, linguistics, etc. [See also 02F10.]
 20M99 None of the above, but in this section
- 20Nxx Other generalizations of groups**
 20N05 Loops, quasigroups [See also 05Bxx.]
 20N10 Ternary systems (heaps, semiheaps, heapoids, etc.)
 20N15 n -ary systems
 20N99 None of the above, but in this section
- 22-XX TOPOLOGICAL GROUPS, LIE GROUPS [For transformation groups, see 54H15, 57Exx, 58-XX. For abstract harmonic analysis, see 43-XX.]**
 22-01 Elementary exposition (collegiate level)
 22-02 Advanced exposition (research surveys, etc.)
 22-03 Historical
 22-06 Collections of papers; proceedings of conferences
- 22Axx Topological algebraic systems [For topological rings and fields, see 12Jxx, 13Jxx, 16A80; for dual spaces of operator algebras and topological groups, see 46L05.]**
 22A05 Structure of general topological groups
 22A10 Analysis on general topological groups
 22A15 Structure of topological semigroups
 22A20 Analysis on topological semigroups
 22A25 Representations of general topological groups and semigroups
 22A30 Representations of other topological algebraic systems
 22A99 None of the above, but in this section
- 22Bxx Locally compact abelian groups (LCA groups)**
 22B05 General properties and structure of LCA groups
 22B10 Structure of group algebras of LCA groups
 22B99 None of the above, but in this section
- 22C05 Compact groups**
- 22Dxx Locally compact groups and their algebras**
 22D05 General properties and structure of locally compact groups
 22D10 Unitary representations of locally compact groups
 22D12 Other representations of locally compact groups
 22D15 Group algebras of locally compact groups
 22D20 Representations of group algebras
 22D25 C^* -algebras and W^* -algebras arising from group representations

- 22D30 Induced representations
- 22D35 Duality theorems
- 22D40 Ergodic theory on groups [See also 28A65.]
- 22D45 Automorphism groups of locally compact groups
- 22D99 None of the above, but in this section
- 22Exx Lie groups [For the topology of Lie groups and homogeneous spaces, see 57Exx, 57Fxx; for the analysis thereof, see 43A80, 43A85, 43A90.]**
 - 22E05 Local Lie groups [See also 34-XX, 35-XX, 58H05.]
 - 22E10 General properties and structure of complex Lie groups
 - 22E15 General properties and structure of real Lie groups
 - 22E20 General properties and structure of other Lie groups
 - 22E25 Nilpotent and solvable Lie groups
 - 22E30 Analysis on real and complex Lie groups [See also 33A75, 43-XX.]
 - 22E35 Analysis on p -adic Lie groups [See also 12A85.]
 - 22E40 Discrete subgroups of Lie groups [See also 32Nxx.]
 - 22E43 Structure and representation of the Lorentz group
 - 22E45 Representations of Lie and linear algebraic groups: analytic methods [For the purely algebraic theory, see 20G05.]
 - 22E50 Representations of Lie and linear algebraic groups over local fields: analytic methods [For the purely algebraic theory, see 20G05.]
 - 22E55 Representations of Lie and linear algebraic groups over global fields and adèle rings: analytic methods [For the purely algebraic theory, see 20G05.]
 - 22E60 Lie algebras of Lie groups [For the algebraic theory of Lie algebras, see 17Bxx.]
 - 22E65 Infinite dimensional Lie groups and their Lie algebras [See also 17B65, 58H05.]
 - 22E70 Applications of Lie groups to physics; explicit representations [See also 81-XX.]
 - 22E99 None of the above, but in this section

26-XX REAL FUNCTIONS [See also 54C30.]

- 26-01 Elementary exposition (collegiate level)
- 26-02 Advanced exposition (research surveys, etc.)
- 26-03 Historical
- 26-04 Explicit machine computation and programs (not the theory of computation or programming)
- 26-06 Collections of papers; proceedings of conferences
- 26A03 Foundations: limits and generalizations, elementary topology of the line
- 26A06 One-variable calculus
- 26A09 Elementary functions
- 26A12 Rate of growth of functions, orders of infinity, slowly increasing functions [See also 26A48.]
- 26A15 Continuity and related questions (modulus of continuity, semicontinuity, discontinuities, etc.) [For properties determined by Fourier coefficients, see 42A16; for those determined by approximation properties, see 41A25.]
- 26A16 Lipschitz (Hölder) classes
- 26A18 Iteration [See also 39A20.]
- 26A21 Classification of real functions; Baire classification of sets and functions [See also 04A15, 28A05, 54C50.]
- 26A24 Differentiation (functions of one variable): general theory, generalized derivatives, mean-value theorems [See also 28A15.]
- 26A27 Nondifferentiability (nondifferentiable functions, points of nondifferentiability), discontinuous derivatives
- 26A30 Singular functions, Cantor functions, functions with other special properties
- 26A33 Fractional derivatives and integrals
- 26A36 Antidifferentiation
- 26A39 Denjoy and Perron integrals, other special integrals
- 26A42 Integrals of Riemann, Stieltjes and Lebesgue type [See also 28-XX.]
- 26A45 Functions of bounded variation, generalizations
- 26A48 Monotonic functions, generalizations
- 26A51 Convexity, generalizations
- 26A54 Several variables: continuity and differentiation questions
- 26A57 Several variables: implicit function theorems, Jacobians, transformations with several variables

- 26A60 Calculus of vector functions
- 26A63 Integration: length, area, volume
- 26A66 Integral formulas (Stokes, Gauss, Green, etc.)
- 26A69 Special properties of functions of several variables, Hölder conditions, etc.
- 26A70 Set-valued functions of one or several variables
- 26A72 Superposition of functions
- 26A75 Polynomials (analytic properties, inequalities, etc.)
- 26A78 Polynomials (location of zeros) [See also 12D10, 30A08, 65H05.]
- 26A81 Rational functions
- 26A82 Inequalities for trigonometric functions and polynomials
- 26A84 Inequalities involving derivatives and differential and integral operators
- 26A86 Inequalities for sums, series and integrals
- 26A87 Other analytical inequalities
- 26A90 Real-analytic functions
- 26A93 C^∞ -functions, quasi-analytic functions
- 26A96 Calculus of functions on infinite-dimensional spaces
- 26A97 Non-Archimedean analysis
- 26A98 Nonstandard analysis [See also 02H25.]
- 26A99 Miscellaneous topics

28-XX MEASURE AND INTEGRATION [For analysis on manifolds, see 58-XX.]

- 28-01 Elementary exposition (collegiate level)
- 28-02 Advanced exposition (research surveys, etc.)
- 28-03 Historical
- 28-06 Collections of papers; proceedings of conferences
- 28A05 Classes of sets (Borel fields, σ -rings, etc.), measurable sets, Suslin sets, analytic sets [See also 04A15, 26A21, 54H05.]
- 28A10 Real- or complex-valued set functions, contents, measures, outer measures, capacities, etc.
- 28A15 Abstract differentiation theory, differentiation of set functions [See also 26A24.]
- 28A20 Measurable and nonmeasurable functions, sequences of measurable functions, modes of convergence
- 28A25 Integration with respect to measures and other set functions
- 28A30 Integration theory via linear functionals (Radon measures, Daniell integrals, etc.)
- 28A32 Measures on topological spaces (regularity of measures, etc.), spaces of measures, weak convergence of measures, etc. [See also 46E27, 60Bxx.]
- 28A35 Measures and integrals in product spaces
- 28A40 Measures and integrals in function spaces and linear spaces, Wiener measure [See also 46Gxx.]
- 28A45 Vector-valued and group-valued measures and integrals; measures and integrals with values in general algebraic systems [See also 46G10.]
- 28A50 Integration and disintegration of measures [For lifting theory, see 46G15.]
- 28A55 Measures and integrals with values in general ordered systems
- 28A60 Measures on Boolean rings, measure algebras [See also 54H10.]
- 28A65 Measure-preserving transformations, flows (dynamical systems), measure-theoretic ergodic theory [See also 47A35, 54H20, 58Fxx.]
- 28A70 Invariant measures, Haar measure [See also 43A05.]
- 28A75 Length, area, volume, other geometric measure theory [See also 26A63, 49F20.]
- 28A99 Miscellaneous topics

30-XX FUNCTIONS OF A COMPLEX VARIABLE [For analysis on manifolds, see 58-XX.]

- 30-01 Elementary exposition (collegiate level)
- 30-02 Advanced exposition (research surveys, etc.)
- 30-03 Historical
- 30-04 Explicit-machine computation and programs (not the theory of computation or programming)
- 30-06 Collections of papers; proceedings of conferences
- 30A02 Monogenic properties of complex functions (including polygenic and areolar monogenic functions)
- 30A04 Inequalities in the complex domain

- 30A06 Polynomials
- 30A08 Zeros of polynomials, rational functions, and other analytic functions (e.g. zeros of functions with bounded Dirichlet integral) [For algebraic theory, see 12D10; for real methods, see 26A78.]
- 30A10 Power series (including lacunary series)
- 30A12 Boundary behavior of power series, overconvergence
- 30A14 Analytic continuation
- 30A16 Dirichlet series and other series expansions, exponential series [See also 40-XX, 41-XX, 42-XX.]
- 30A18 Completeness problems, closure of a system of functions
- 30A20 Functional equations in the complex domain, iteration and composition of analytic functions [See also 34A20, 39A15.]
- 30A22 Continued fractions [See also 10A30, 40A15.]
- 30A24 Conformal mappings of special domains
- 30A26 Covering theorems in conformal mapping theory
- 30A28 Numerical methods in conformal mapping theory
- 30A30 General theory of conformal mappings
- 30A31 Kernel functions and applications
- 30A32 Special classes of univalent and multivalent functions (star-like, convex, bounded rotation, etc.)
- 30A34 Coefficient problems for univalent and multivalent functions
- 30A36 General theory of univalent and multivalent functions
- 30A38 Extremal problems, variational methods
- 30A40 Extremal problems, other methods
- 30A42 Maximum principle; Schwarz' Lemma, Lindelöf principle, analogues and generalizations
- 30A44 Capacity and harmonic measure in the complex plane [See also 31A15.]
- 30A46 Compact Riemann surfaces and uniformization [See also 14H15, 32G15.]
- 30A48 Classification theory of Riemann surfaces
- 30A50 Ideal boundary theory
- 30A52 Differentials on Riemann surfaces
- 30A58 Discontinuous groups and automorphic functions [See also 10Dxx, 20H10.]
- 30A60 Quasiconformal mappings and functions
- 30A62 Representations of entire functions by series and integrals
- 30A64 Special classes of entire functions and growth estimates
- 30A66 Entire functions, general theory
- 30A68 Meromorphic functions, general theory
- 30A70 Distribution of values, Nevanlinna theory
- 30A72 Cluster sets, prime ends, boundary behavior
- 30A74 Normal functions, normal families
- 30A76 Blaschke products, bounded characteristic, bounded functions, functions with positive real part
- 30A78 H^p , quasianalytic and other classes of functions
- 30A80 Moment problems, interpolation problems
- 30A82 Approximation in the complex domain
- 30A84 Asymptotic representations in the complex domain
- 30A86 Integration, integrals of Cauchy type, integral representations of analytic functions [see also 45Exx.]
- 30A88 Boundary value problems
- 30A90 Topological function theory
- 30A91 Nonstandard function theory [See also 02H25.]
- 30A92 Generalized analytic functions
- 30A93 Pseudo-analytic functions
- 30A94 p -analytic functions
- 30A95 Discrete analytic functions
- 30A96 Other generalizations of analytic functions (including abstract-valued functions)
- 30A97 Functions of hypercomplex variables and generalized variables
- 30A98 Spaces and algebras of analytic functions [See also 46J15.]
- 31-XX POTENTIAL THEORY [For probabilistic potential theory, see 60J45.]**
- 31-01 Elementary exposition (collegiate level)
- 31-02 Advanced exposition (research surveys, etc.)
- 31-03 Historical
- 31-06 Collections of papers; proceedings of conferences
- 31Axx Two-dimensional theory**
- 31A05 Harmonic, subharmonic, superharmonic functions
- 31A10 Integral representations
- 31A15 Potentials and capacity, harmonic measure, extremal length
- 31A20 Boundary behavior (Fatou type theorems, etc.)
- 31A25 Boundary value and inverse problems
- 31A30 Biharmonic, polyharmonic functions and equations, Poisson's equation
- 31A35 Connections with differential equations
- 31A99 None of the above, but in this section
- 31Bxx Higher dimensional theory**
- 31B05 Harmonic, subharmonic, superharmonic functions
- 31B10 Integral representations
- 31B15 Potentials and capacities, extremal length
- 31B20 Boundary value and inverse problems
- 31B25 Boundary behavior
- 31B30 Biharmonic and polyharmonic equations and functions
- 31B35 Connections with differential equations
- 31B99 None of the above, but in this section
- 31Cxx Other generalizations**
- 31C05 Harmonic, subharmonic, superharmonic functions
- 31C10 Pluriharmonic and plurisubharmonic functions [See also 32F05.]
- 31C15 Potentials and capacities
- 31C20 Discrete potential theory and numerical methods
- 31C25 Dirichlet spaces
- 31C99 None of the above, but in this section
- 31D05 Axiomatic potential theory**
- 32-XX SEVERAL COMPLEX VARIABLES AND ANALYTIC SPACES**
- 32-01 Elementary exposition (collegiate level)
- 32-02 Advanced exposition (research surveys, etc.)
- 32-03 Historical
- 32-06 Collections of papers; proceedings of conferences
- 32Axx Holomorphic functions of several complex variables**
- 32A05 Power series, series of functions
- 32A07 Special domains (Reinhardt, Hartogs, tube domains, etc.)
- 32A10 Holomorphic functions
- 32A15 Entire functions
- 32A17 Normal families
- 32A20 Meromorphic functions
- 32A25 Integral representation and residue theory
- 32A30 Other generalizations of function theory of one complex variable [For functions of several hypercomplex variables, see 30A97.]
- 32A99 None of the above, but in this section
- 32Bxx Local analytic geometry [See also 13-XX and 14-XX.]**
- 32B05 Analytic algebra and generalizations, preparation theorems
- 32B10 Germs of analytic sets
- 32B15 Analytic subsets of affine space
- 32B20 Semi-analytic sets
- 32B99 None of the above, but in this section
- 32Cxx General theory of analytic spaces**
- 32C05 Real-analytic manifolds, real-analytic spaces
- 32C10 Complex manifolds [For almost complex manifolds, see 53C15.]
- 32C15 Complex spaces
- 32C20 Normal analytic spaces
- 32C25 Analytic subsets and submanifolds
- 32C30 Integration on analytic sets and spaces
- 32C35 Analytic sheaves and cohomology groups [See also 18F20, 55B30.]
- 32C40 Singularities
- 32C45 Modifications, resolution of singularities [See also 14E15.]
- 32C99 None of the above, but in this section
- 32Dxx Analytic continuation**
- 32D05 Domains of holomorphy
- 32D10 Envelopes of holomorphy
- 32D15 Continuation of analytic objects
- 32D20 Removable singularities
- 32D99 None of the above, but in this section

32Exx Holomorphic convexity

- 32E05 Holomorphically convex complex spaces, reduction theory
- 32E10 Stein spaces, Stein manifolds
- 32E15 Runge pairs
- 32E20 Polynomial convexity
- 32E25 Algebras of holomorphic functions
- 32E30 Holomorphic and polynomial approximation
- 32E99 None of the above, but in this section

32Fxx Geometric convexity

- 32F05 Plurisubharmonic functions and generalizations [See also 31C10.]
- 32F10 q -convexity, q -concavity
- 32F15 Pseudoconvex domains
- 32F99 None of above, but in this section [For the theory of the $\bar{\partial}$ -Neumann problem on pseudoconvex domains, see 35N15.]

32Gxx Deformations of analytic structures

- 32G05 Deformations of complex structures [See also 13D10, 16A58, 58H05.]
- 32G10 Deformations of submanifolds and subspaces
- 32G13 Analytic moduli problems [For algebraic moduli problems, see 14D20.]
- 32G15 Moduli of Riemann surfaces, Teichmüller theory [See also 30A46.]
- 32G20 Period matrices
- 32G99 None of the above, but in this section

32Hxx Analytic mappings

- 32H05 Representative domains
- 32H10 Bergman kernel function
- 32H15 Invariant metrics and pseudodistances
- 32H20 Hyperbolic complex manifolds
- 32H25 Picard type theorems and generalizations
- 32H99 None of the above, but in this section

32Jxx Compact analytic spaces [For Riemann surfaces, see 14Hxx, 30A46.]

- 32J05 Compactification
- 32J10 Algebraic dependence theorems
- 32J15 Compact surfaces [See also 14Jxx.]
- 32J20 Algebraicity criteria
- 32J25 Transcendental methods of algebraic geometry [See also 14C30.]
- 32J99 None of the above, but in this section

32Kxx Generalizations of analytic spaces

- 32K05 Banach analytic spaces [See also 58Bxx.]
- 32K10 Non-Archimedean analytic spaces
- 32K15 Differentiable functions on analytic spaces, differentiable spaces [see also 58C25.]
- 32K99 None of the above, but in this section

32Lxx Holomorphic fiber spaces [See also 55Fxx.]

- 32L05 Holomorphic fiber bundles and generalizations
- 32L10 Sheaves and cohomology of sections of holomorphic vector bundles [See also 18F40, 55B30.]
- 32L99 None of the above, but in this section

32Mxx Complex spaces with a group of automorphisms

- 32M05 Complex Lie groups, automorphism groups of complex spaces [See also 22E10.]
- 32M10 Homogeneous complex manifolds [See also 57F15.]
- 32M15 Hermitian symmetric spaces, bounded symmetric domains [See also 22E10, 22E40, 53C35, 57F15.]
- 32M99 None of the above, but in this section

32Nxx Automorphic functions [See also 10Dxx, 20H10, 22E40, 30A58.]

- 32N05 General theory of automorphic functions of several complex variables
- 32N10 Automorphic forms
- 32N15 Automorphic functions in symmetric domains
- 32N99 None of the above, but in this section

33-XX SPECIAL FUNCTIONS [33-XX deals with the properties of functions as functions. General systems of orthogonal functions are treated in 42A52. Expansions in orthogonal functions are treated in 42A56.]

- 33-01 Elementary exposition (collegiate level)
- 33-02 Advanced exposition (research surveys, etc.)
- 33-03 Historical
- 33-04 Explicit machine computation and programs (not the theory of computation or programming)
- 33-06 Collections of papers; proceedings of conferences
- 33A10 Exponential and trigonometric functions
- 33A15 Gamma and beta functions
- 33A20 Error function, probability integral
- 33A25 Elliptic functions and integrals
- 33A30 Hypergeometric functions of one and several variables, generalizations
- 33A35 E -functions, G -functions, H -functions, etc.
- 33A40 Cylindrical functions, Bessel functions
- 33A45 Spherical functions (Legendre polynomials and functions, spherical harmonics), ultraspherical polynomials
- 33A50 Gegenbauer functions
- 33A55 Lamé, Mathieu, spheroidal wave functions
- 33A60 Other wave functions
- 33A65 Orthogonal special functions and polynomials (Čebyšev, Hermite, Jacobi, Laguerre, etc.)
- 33A70 Other special functions
- 33A75 Special functions and Lie groups

34-XX ORDINARY DIFFERENTIAL EQUATIONS

- 34-01 Elementary exposition (collegiate level)
- 34-02 Advanced exposition (research surveys, etc.)
- 34-03 Historical
- 34-04 Explicit machine computation and programs (not the theory of computation or programming)
- 34-06 Collections of papers; proceedings of conferences

34Axx General theory

- 34A05 Solutions in closed form, integration by quadratures, reduction of differential equations
- 34A10 Initial value problems: general existence and uniqueness theorems; continuous dependence of solutions on parameters, initial conditions and boundary conditions
- 34A15 Initial value problems: continuation of solutions
- 34A20 Differential equations in the complex domain [See also 30A20.]
- 34A25 Analytical theory: series, transformations, transforms, operational calculus, etc. [See also 44-XX, 47E05.]
- 34A30 Linear equations and systems
- 34A35 Differential equations of infinite order
- 34A40 Differential inequalities
- 34A45 Theoretical approximation of solutions
- 34A50 Numerical approximation of solutions [For numerical analysis, see 65Lxx.]
- 34A99 None of the above, but in this section

34Bxx Boundary value problems

- 34B05 Linear equations
- 34B10 Multipoint boundary value problems
- 34B15 Nonlinear boundary value problems
- 34B20 Weyl theory and its generalizations
- 34B25 Spectral theory, Sturm-Liouville, and scattering theory; eigenfunctions, eigenvalues, and expansions [See also 42-XX, 43-XX, 47Axx, 47Bxx, 47E05.]
- 34B30 Special equations (Mathieu, Hill, Bessel, etc.) [See also 33-XX.]
- 34B99 None of the above, but in this section

34Cxx Qualitative theory

- 34C05 Limit cycles, singular points
- 34C10 Zeros, disconjugacy, growth, boundedness, oscillation and comparison of solutions
- 34C15 Nonlinear oscillations
- 34C20 Transformation and reduction of equations and systems
- 34C25 Periodic and almost periodic solutions
- 34C30 Manifolds of solutions, averaging method [See also 47H10, 58Fxx.]

- 34C35 Dynamical systems [See also 58Fxx, 70-XX.]
- 34C40 Equations and systems on manifolds [See also 58Fxx, 58Gxx.]
- 34C99 None of the above, but in this section
- 34Dxx Stability theory [See also 58F10, 93Dxx.]**
- 34D05 Asymptotic properties, characteristic exponents
- 34D10 Perturbations
- 34D15 Singular perturbations
- 34D20 Ljapunov stability
- 34D25 Popov-type stability
- 34D30 Structural stability and analogous concepts [See also 58Fxx.]
- 34D35 Stability of manifolds of solutions
- 34D99 None of the above, but in this section
- 34Exx Asymptotic theory**
- 34E05 Asymptotic expansions
- 34E10 Perturbations
- 34E15 Singular perturbations, general theory
- 34E20 Singular perturbations, turning point theory, WKB-methods
- 34E99 None of the above, but in this section
- 34F05 Equations and systems with randomness [See also 60H05, 93Exx.]**
- 34G05 Differential equations in Banach and other abstract spaces [See also 47Bxx.]**
- 34H05 Control problems [See also 49-XX, 93-XX.]**
- 34Jxx Functional differential equations**
- 34J05 General theory
- 34J10 Differential-difference equations
- 34J99 None of the above, but in this section
- 34Kxx Functional-differential equations with retarded arguments, functional-differential equations with deviating arguments**
- 34K05 General theory
- 34K10 Boundary value problems
- 34K15 Qualitative theory
- 34K20 Stability theory
- 34K25 Asymptotic theory
- 34K99 None of the above, but in this section
- 55-XX PARTIAL DIFFERENTIAL EQUATIONS**
- 35-01 Elementary exposition (collegiate level)
- 35-02 Advanced exposition (research surveys, etc.)
- 35-03 Historical
- 35-04 Explicit machine computation and programs (not the theory of computation or programming)
- 35-06 Collections of papers; proceedings of conferences
- 35Axx General theory**
- 35A05 General existence and uniqueness theorems
- 35A10 Cauchy-Kowalewski theorems
- 35A15 Variational methods
- 35A20 Analytic methods, singularities
- 35A22 Transform methods
- 35A25 Other special methods
- 35A30 Geometric theory, characteristics, transformations
- 35A35 Theoretical approximation to solutions
- 35A40 Numerical approximation to solutions [For numerical analysis, see 65Mxx, 65Nxx, 65P05.]
- 35A99 None of the above, but in this section
- 35Bxx Qualitative properties of solutions**
- 35B05 Comparison theorems; oscillation, zeros and growth of solutions
- 35B10 Periodic solutions
- 35B15 Almost periodic solutions
- 35B20 Perturbations
- 35B25 Singular perturbations
- 35B30 Dependence of solutions on initial and boundary data, parameters
- 35B35 Stability and control, boundedness [See also 93-XX.]
- 35B40 Asymptotic behavior of solutions
- 35B45 Differential inequalities, a priori estimates
- 35B99 None of the above, but in this section
- 35Cxx Representations of solutions**
- 35C05 Solutions in closed form
- 35C10 Series solutions, expansion theorems
- 35C15 Integral representations
- 35C99 None of the above, but in this section
- 35Dxx Generalized solutions**
- 35D05 Existence of generalized solutions
- 35D10 Regularity of generalized solutions
- 35D99 None of the above, but in this section
- 35Exx Equations and systems with constant coefficients [See also 35N05.]**
- 35E05 Fundamental solutions
- 35E10 Convexity properties
- 35E15 Initial value problems
- 35E99 None of the above, but in this section
- 35Fxx General first order equations and systems**
- 35F05 Linear equations and systems, general
- 35F10 Initial value problems for linear equations and systems
- 35F15 Boundary value problems for linear equations and systems
- 35F20 Nonlinear equations and systems, general
- 35F25 Initial value problems for nonlinear equations and systems
- 35F30 Boundary value problems for nonlinear equations and systems
- 35F99 None of the above, but in this section
- 35Gxx General higher order equations and systems**
- 35G05 Linear equations and systems, general
- 35G10 Initial value problems for linear equations and systems
- 35G15 Boundary value problems for linear equations and systems
- 35G20 Nonlinear equations and systems, general
- 35G25 Initial value problems for nonlinear equations and systems
- 35G30 Boundary value problems for nonlinear equations and systems
- 35G99 None of the above, but in this section
- 35H05 Hypoelliptic equations and systems**
- 35Jxx Elliptic equations and systems**
- 35J05 Laplace's equation, reduced wave equation (Helmholtz), Poisson's equation
- 35J10 Schrödinger operator [See also 47A40.]
- 35J15 Second order equations, general
- 35J20 Second order equations, variational methods
- 35J25 Second order equations, boundary value problems
- 35J30 Higher order equations, general
- 35J35 Higher order equations, variational methods
- 35J40 Higher order equations, boundary value problems
- 35J45 Systems, general
- 35J50 Systems, variational methods
- 35J55 Systems, boundary value problems
- 35J60 Nonlinear equations and systems
- 35J65 Nonlinear boundary value problems for linear equations and systems; boundary value problems for nonlinear equations and systems
- 35J67 Boundary values of solutions
- 35J70 Equations and systems of degenerate type
- 35J99 None of the above, but in this section
- 35Kxx Parabolic equations and systems**
- 35K05 Heat equation
- 35K10 Second order equations, general
- 35K15 Second order equations, initial value problems
- 35K20 Second order equations, boundary value problems
- 35K25 Higher order equations, general
- 35K30 Higher order equations, initial value problems
- 35K35 Higher order equations, boundary value problems
- 35K40 Systems, general
- 35K45 Systems, initial value problems
- 35K50 Systems, boundary value problems
- 35K55 Nonlinear equations and systems
- 35K60 Nonlinear boundary value problems for linear equations and systems; boundary value problems for nonlinear equations and systems
- 35K99 None of the above, but in this section
- 35Lxx Hyperbolic equations and systems**
- 35L05 Wave equation

- 35L10 Second order equations, general
- 35L15 Second order equations, initial value problems
- 35L20 Second order equations, boundary value problems
- 35L25 Higher order equations, general
- 35L30 Higher order equations, initial value problems
- 35L35 Higher order equations, boundary value problems
- 35L40 First order systems, general
- 35L45 First order systems, initial value problems
- 35L50 First order systems, boundary value problems
- 35L55 Higher order hyperbolic systems
- 35L60 Nonlinear equations and systems, general
- 35L65 Conservation laws [See also 76Axx.]
- 35L99 None of the above, but in this section
- 35M05 Equations and systems of mixed type (Tricomi, etc.)**
[For degenerate types, elliptic, see 35Jxx, hyperbolic, see 35Lxx, etc.]
- 35Nxx Overdetermined systems**
 - 35N05 Constant coefficients
 - 35N10 Variable coefficients, general
 - 35N15 $\bar{\partial}$ -Neumann problem and generalizations; formal complexes [See also 58G05.]
 - 35N99 None of the above, but in this section
- 35Pxx Spectral theory and eigenvalue problems [See also 47Axx, 47Bxx, 47F05.]**
 - 35P05 General spectral theory
 - 35P10 Completeness of eigenfunctions, eigenfunction expansions
 - 35P15 Estimation of eigenvalues, upper and lower bounds
 - 35P20 Asymptotic distribution of eigenvalues and eigenfunctions
 - 35P25 Scattering theory [See also 47A40.]
 - 35P99 None of the above, but in this section
- 35Qxx Special equations and problems [See also 35J05, 35K05, 35L05.]**
 - 35Q05 Euler-Poisson-Darboux equation and generalizations
 - 35Q10 Navier-Stokes equation [See also 76D05.]
 - 35Q15 Riemann-Hilbert problems [See also 30A88, 31A25.]
 - 35Q99 None of the above, but in this section
- 35Rxx Miscellaneous topics [For equations on manifolds, see 58Gxx; for manifolds of solutions, see 58Bxx; for stochastic PDE's, see 60H15.]**
 - 35R05 Equations with discontinuous coefficients or data
 - 35R10 Difference-partial differential equations, equations with time lag
 - 35R15 Equations on function spaces
 - 35R20 Operator equations, general [See also 34G05, 47A50, 47H15.]
 - 35R25 Improperly posed problems
 - 35R30 Inverse problems (undetermined coefficients, etc.)
 - 35R99 None of the above, but in this section
- 35Sxx Pseudodifferential operators [See also 47G05.]**
 - 35S05 General theory
 - 35S10 Initial value problems
 - 35S15 Boundary value problems
 - 35S99 None of the above, but in this section
- 39-XX FINITE DIFFERENCES AND FUNCTIONAL EQUATIONS**
 - 39-01 Elementary exposition (collegiate level)
 - 39-02 Advanced exposition (research surveys, etc.)
 - 39-03 Historical
 - 39-06 Collections of papers; proceedings of conferences
 - 39A05 Finite differences, general
 - 39A10 Difference equations
 - 39A12 Discrete analysis of topics in analysis
 - 39A15 Functional equations, general [For functional-differential equations, see 34Jxx.]
 - 39A20 Classical functional equations
 - 39A25 Linear and multilinear functional equations
 - 39A30 Functional equations in several variables, systems
 - 39A35 Matrix functional equations
 - 39A40 Functional equations on abstract structures
- 40-XX SEQUENCES, SERIES, SUMMABILITY**
 - 40-01 Elementary exposition (collegiate level)
 - 40-02 Advanced exposition (research surveys, etc.)
 - 40-03 Historical
 - 40Axx Convergence and divergence of infinite limiting processes**
 - 40A05 Convergence and divergence of series and sequences
 - 40A10 Convergence and divergence of integrals
 - 40A15 Convergence and divergence of continued fractions [See also 30A22.]
 - 40A20 Convergence and divergence of infinite products
 - 40A25 Approximation to limiting values (summation of series, etc.) [For the Euler-Maclaurin summation formula, see 65B15.]
 - 40A99 None of the above, but in this section
 - 40B05 Multiple sequences and series**
 - 40Cxx General summability methods**
 - 40C05 Matrix methods
 - 40C10 Integral methods
 - 40C15 Function theoretic methods (including power series methods and semicontinuous methods)
 - 40C99 None of the above, but in this section
 - 40Dxx Direct theorems on summability**
 - 40D05 General theorems
 - 40D10 Tauberian constants and oscillation limits
 - 40D15 Convergence factors and summability factors
 - 40D20 Summability and bounded fields of methods
 - 40D25 Inclusion and equivalence theorems
 - 40D99 None of the above, but in this section
 - 40E05 Tauberian theorems**
 - 40F05 Absolute and strong summability**
 - 40Gxx Special methods of summability**
 - 40G05 Cesàro, Euler, Nörlund and Hausdorff methods
 - 40G10 Abel, Borel and power series methods
 - 40G99 None of the above, but in this section
 - 40H05 Functional analytic methods in summability**
 - 40J05 Summability in abstract structures [See also 43A55.]**
- 41-XX APPROXIMATIONS AND EXPANSIONS [For all approximation theory in the complex domain, see 30A80 and 30A82; for all trigonometric approximation and interpolation, see 42A08, 42A12.]**
 - 41-01 Elementary exposition (collegiate level)
 - 41-02 Advanced exposition (research surveys, etc.)
 - 41-03 Historical
 - 41-04 Explicit machine computation and programs (not the theory of computation or programming)
 - 41-06 Collections of papers; proceedings of conferences
 - 41A05 Interpolation [See also 42A12 and 65D05.]
 - 41A10 Approximation by polynomials [For approximation by trigonometric polynomials, see 42A08.]
 - 41A15 Spline approximation
 - 41A20 Approximation by rational functions
 - 41A25 Rate of convergence, degree of approximation
 - 41A30 Approximation by other special function classes
 - 41A35 Approximation by operators (in particular, by integral operators)
 - 41A40 Saturation classes
 - 41A45 Approximation by arbitrary linear and nonlinear expressions; widths and entropy
 - 41A50 Best approximation (Čebyšev, etc.)
 - 41A55 Approximate quadratures
 - 41A60 Asymptotic approximations, asymptotic expansions (steepest descent, etc.) [See also 30A84.]
 - 41A63 Multidimensional problems
 - 41A65 Abstract approximation theory (approximation in normed linear spaces and other abstract spaces)
- 42-XX FOURIER ANALYSIS**
 - 42-01 Elementary exposition (collegiate level)
 - 42-02 Advanced exposition (research surveys, etc.)
 - 42-03 Historical
 - 42-04 Explicit machine computation and programs (not the theory of computation or programming)
 - 42-06 Collections of papers; proceedings of conferences

- 42A04** Trigonometric polynomials, inequalities, extremal problems
- 42A08** Approximation by trigonometric polynomials
- 42A12** Trigonometric interpolation
- 42A16** Fourier coefficients, Fourier series of functions with special properties, special Fourier series
- 42A18** Multipliers
- 42A20** Convergence of Fourier and trigonometric series
- 42A24** Summability of trigonometric series
- 42A28** Absolute convergence, absolute summability
- 42A32** Trigonometric series of special types (positive coefficients, monotonic coefficients, etc.)
- 42A36** Probabilistic methods in Fourier analysis
- 42A40** Conjugate functions, conjugate series, singular integrals
- 42A44** Lacunary series of trigonometric and other functions; Riesz products
- 42A48** Uniqueness of trigonometric expansions, uniqueness of Fourier expansions, Riemann theory, localization
- 42A52** Orthogonal functions and polynomials, general theory [See also 33A65.]
- 42A56** Fourier series in special orthogonal functions (Legendre polynomials, Walsh functions, etc.)
- 42A60** Series of general orthogonal functions and generalized Fourier expansions; nonorthogonal expansions
- 42A62** Uniqueness and localization for orthogonal series
- 42A64** Completeness of sets of functions
- 42A68** Fourier transforms
- 42A72** Fourier-Stieltjes transforms [See also 60E05.]
- 42A76** Other transforms of Fourier type [See also 44A05.]
- 42A80** Trigonometric moment problems
- 42A84** Classical almost periodic functions, mean periodic functions [See also 43A60.]
- 42A88** Positive definite functions
- 42A92** Multiple Fourier series and integrals
- 42A96** Convolution, factorization
- 42A99** Miscellaneous topics
- 43-XX ABSTRACT HARMONIC ANALYSIS [For other analysis on topological and Lie groups, see 22Exx.]**
- 43-01** Elementary exposition (collegiate level)
- 43-02** Advanced exposition (research surveys, etc.)
- 43-03** Historical
- 43-06** Collections of papers; proceedings of conferences
- 43A05** Measures on groups and semigroups
- 43A07** Means on groups and semigroups
- 43A10** Measure algebras on groups and semigroups
- 43A15** L_p spaces and other function spaces on groups and semigroups
- 43A20** L_1 algebras on groups and semigroups
- 43A22** Homomorphisms and multipliers of function spaces on groups
- 43A25** Fourier and Fourier-Stieltjes transforms on locally compact abelian groups
- 43A30** Fourier and Fourier-Stieltjes transforms on nonabelian groups and on semigroups
- 43A32** Other transforms and operators of Fourier type
- 43A35** Positive definite functions on groups
- 43A40** Character groups and dual objects
- 43A45** Spectral synthesis on groups and semigroups
- 43A46** Special sets (thin sets, Helson sets, Kronecker sets, Sidon sets, etc.)
- 43A50** Convergence of Fourier series and of inverse transforms
- 43A55** Summability methods on groups and semigroups
- 43A60** Almost periodic functions on groups and semigroups
- 43A65** Representations of groups and semigroups
- 43A70** Analysis on specific locally compact abelian groups [See also 12A85.]
- 43A75** Analysis on specific compact groups
- 43A80** Analysis on other specific Lie groups
- 43A85** Analysis on homogeneous spaces
- 43A90** Spherical functions
- 43A95** Categorical methods [See also 18-XX.]

- 44-XX INTEGRAL TRANSFORMS, OPERATIONAL CALCULUS [For fractional derivatives and integrals, see 26A33.]**
- 44-01** Elementary exposition (collegiate level)
- 44-02** Advanced exposition (research surveys, etc.)
- 44-03** Historical
- 44A05** General transforms [See also 42A76.]
- 44A10** Laplace transform
- 44A15** Special transforms (Legendre, Hilbert, etc.)
- 44A20** Transforms of special functions
- 44A25** Singular integrals (Calderón-Zygmund, etc.) [See also 47G05.]
- 44A30** Multiple transforms
- 44A35** Convolution
- 44A40** Calculus of Mikusiński and other similar operational calculi
- 44A45** Classical operational calculus
- 44A50** Moment problems [See also 42A80.]
- 44A99** Miscellaneous topics
- 45-XX INTEGRAL EQUATIONS**
- 45-01** Elementary exposition (collegiate level)
- 45-02** Advanced exposition (research surveys, etc.)
- 45-03** Historical
- 45-06** Collections of papers; proceedings of conferences
- 45A05** Linear integral equations
- 45B05** Fredholm integral equations
- 45C05** Eigenvalue problems [See also 34B25, 35Pxx, 47E05.]
- 45D05** Volterra integral equations [See also 34A10.]
- 45Exx** Singular integral equations
- 45E05** Integral equations with Cauchy type kernels [See also 30A88, 35J15, 44A15, 44A35.]
- 45E10** Integral equations of the convolution type (Abel, Picard, Toeplitz and Wiener-Hopf type) [See also 44A15, 44A35, 47B35.]
- 45E99** None of the above, but in this section
- 45Fxx** Systems of linear integral equations
- 45F05** Systems of nonsingular linear integral equations
- 45F10** Dual, triple, etc., integral and series equations
- 45F15** Systems of singular linear integral equations
- 45F99** None of the above, but in this section
- 45Gxx** Nonlinear integral equations [See also 47Hxx.]
- 45G05** Singular nonlinear integral equations
- 45G99** Other nonlinear integral equations
- 45H05** Miscellaneous special kernels [See also 44A15.]
- 45J05** Integro-ordinary differential equations
- 45K05** Integro-partial differential equations
- 45Lxx** Approximation of solutions
- 45L05** Theoretical approximation of solutions
- 45L10** Numerical approximation of solutions [For numerical analysis, see 65R05.]
- 45Mxx** Qualitative behavior
- 45M05** Asymptotics
- 45M10** Stability theory
- 45M99** None of the above, but in this section
- 45N05** Abstract integral equations, integral equations in abstract spaces
- 46-XX FUNCTIONAL ANALYSIS [For manifolds modelled on topological linear spaces, see 57A20, 58Bxx.]**
- 46-01** Elementary exposition (collegiate level)
- 46-02** Advanced exposition (research surveys, etc.)
- 46-03** Historical
- 46-04** Explicit machine computation and programs (not the theory of computation or programming)
- 46-06** Collections of papers; proceedings of conferences
- 46Axx** Topological linear spaces
- 46A05** Locally convex spaces
- 46A07** Barrelled spaces
- 46A09** Bornological spaces
- 46A10** Locally bounded topological linear spaces
- 46A15** Other topological linear spaces

- 46A20 Duality theory
- 46A25 Reflexivity and semi-reflexivity
- 46A30 Open mappings and closed graph theorems and completeness (including B_- , B_+ -completeness)
- 46A35 Summability and bases
- 46A40 Ordered topological linear spaces, vector lattices
- 46A45 Sequence spaces (including Köthe spaces)
- 46A99 None of the above, but in this section
- 46Bxx Normed linear spaces and Banach spaces [For function spaces, see 46Exx.]**
 - 46B05 Topology in terms of the norms
 - 46B10 Duality and reflexivity
 - 46B15 Summability and bases
 - 46B99 None of the above, but in this section
- 46Cxx Inner product spaces, Hilbert spaces [For function spaces, see 46Exx.]**
 - 46C05 Geometry and topology of the spaces
 - 46C10 Other properties of such spaces
 - 46C99 None of the above, but in this section
- 46D05 Spaces with indefinite inner product**
- 46Exx Function spaces and their duals [For function algebras, see 46J10.]**
 - 46E05 Lattices of continuous, differentiable or analytic functions
 - 46E10 Topological linear spaces of continuous, differentiable or analytic functions
 - 46E15 Banach spaces of continuous, differentiable or analytic functions
 - 46E20 Hilbert spaces of continuous, differentiable or analytic functions
 - 46E25 Rings and algebras of continuous, differentiable or analytic functions [For Banach function algebras, see 46J10, 46J15.]
 - 46E27 Spaces of measures [See also 28A32.]
 - 46E30 Spaces of measurable functions, L^p spaces, Orlicz spaces [See also 43A15.]
 - 46E35 Sobolev spaces, embedding theorems, trace theorems, interpolation spaces
 - 46E40 Spaces of vector- and operator-valued functions
 - 46E99 None of the above, but in this section
- 46Fxx Distributions, generalized functions, distribution spaces**
 - 46F05 Topological linear spaces of test functions and distributions
 - 46F10 Operations with distributions
 - 46F15 Hyperfunctions, analytic functionals [See also 32A25, 32C35.]
 - 46F99 None of the above, but in this section
- 46Gxx Measures, integration, derivatives [For integration on infinite-dimensional spaces, see 28A40; for nonlinear functional analysis, see 58-XX, especially 58Cxx.]**
 - 46G05 Derivatives
 - 46G10 Vector-valued measures and integration
 - 46G15 Lifting theory
 - 46G20 Infinite-dimensional holomorphy
 - 46G99 None of the above, but in this section
- 46Hxx Topological algebras, normed rings and algebras, Banach algebras [For group algebras, convolution algebras and measure algebras, see 43-XX.]**
 - 46H05 General theory
 - 46H10 Ideals and subalgebras
 - 46H15 Representations
 - 46H20 Structure, classification
 - 46H25 Normed modules and Banach modules
 - 46H99 None of the above, but in this section
- 46Jxx Commutative Banach algebras**
 - 46J05 General theory
 - 46J10 Banach algebras of continuous functions, function algebras
 - 46J15 Banach algebras of differentiable or analytic functions, H^p -spaces [See also 30A98, 32E25.]
 - 46J20 Ideals, maximal ideals, boundaries
 - 46J25 Representations
- 46J30 Subalgebras
- 46J35 Structure, classification
- 46J99 None of the above, but in this section
- 46Kxx Rings and algebras with an involution**
 - 46K05 Ideals, subalgebras
 - 46K10 Representations
 - 46K15 Hilbert algebras
 - 46K99 None of the above, but in this section
- 46Lxx Rings and algebras of operators, with or without involution [For other algebraic systems of operators, see 47Dxx.]**
 - 46L05 C^* -algebras (= B^* -algebras) [See also 22D25.]
 - 46L10 von Neumann algebras (= rings of operators, W^* -algebras)
 - 46L15 Nonselfadjoint operator algebras on Hilbert space
 - 46L20 Operator algebras on Banach and linear topological spaces
 - 46L25 Dual spaces of operator algebras and topological groups
 - 46L99 None of the above, but in this section
- 46Mxx Categorical methods [See also 18-XX.]**
 - 46M05 Tensor products
 - 46M10 Projective and injective objects
 - 46M15 Functors
 - 46M20 Homology and cohomology in functional analysis
 - 46M35 Abstract interpolation of topological vector spaces
 - 46M99 None of the above, but in this section
- 46N05 Miscellaneous applications of functional analysis**
- 47-XX OPERATOR THEORY**
 - 47-01 Elementary exposition (collegiate level)
 - 47-02 Advanced exposition (research surveys, etc.)
 - 47-03 Historical
 - 47-06 Collections of papers; proceedings of conferences
- 47Axx Single linear operators: general theory**
 - 47A05 Adjoints, conjugates
 - 47A10 Spectrum, resolvent, numerical range
 - 47A15 Invariant subspaces
 - 47A20 Dilations, extensions, compressions
 - 47A25 Spectral sets
 - 47A30 Norms (inequalities, more than one norm, etc.)
 - 47A35 Ergodic theory [See also 28A65.]
 - 47A40 Scattering theory [See also 35J10.]
 - 47A45 Canonical models for contractions and nonselfadjoint operators
 - 47A50 Equations involving linear operators
 - 47A55 Perturbation theory
 - 47A60 Functional calculus
 - 47A65 Structure theory
 - 47A70 Eigenfunction expansions, rigged Hilbert spaces; eigenvalue problems in general [See also 49Gxx.]
 - 47A99 None of the above, but in this section
- 47Bxx Single linear operators: special classes of operators**
 - 47B05 Compact operators, Riesz operators
 - 47B10 Hilbert-Schmidt operators, trace class operators, nuclear operators, etc.
 - 47B15 Hermitian and normal operators (spectral measures, functional calculus, etc.)
 - 47B20 Subnormal operators, hyponormal operators, etc.
 - 47B25 Symmetric and selfadjoint operators (unbounded)
 - 47B30 Fredholm operators
 - 47B35 Toeplitz operators, Wiener-Hopf operators [For other integral operators, see also 47G05.]
 - 47B37 Operators on special spaces (weighted shifts, operators on sequence spaces, etc.)
 - 47B40 Spectral operators
 - 47B44 Accretive operators, dissipative operators, etc.
 - 47B45 Difference operators
 - 47B47 Commutators
 - 47B50 Operators on a space with an indefinite metric
 - 47B55 Operators on ordered spaces
 - 47B99 None of the above, but in this section
- 47Cxx Single linear operators as elements of algebraic systems**
 - 47C05 Operators in algebras

47C10 Operators in *-algebras
47C15 Operators in von Neumann algebras
47C99 None of the above, but in this section

47Dxx Algebraic systems of linear operators [For rings and algebras of operators, see 46Kxx, 46Lxx.]
47D05 Semigroups of operators [For Markov processes, see 60Jxx.]
47D10 Groups of operators
47D15 Linear spaces of operators
47D20 Convex sets and cones of operators
47D99 None of the above, but in this section

47E05 Ordinary differential operators [See also 34B25, 58Fxx.]
47F05 Partial differential operators [See also 35Pxx, 58Gxx.]
47G05 Integral, integro-differential, and pseudodifferential operators [See also 35Sxx, 58Gxx.]
47Hxx Nonlinear operators
47H05 Monotone operators
47H10 Fixed point theorems
47H15 Equations involving nonlinear operators
47H99 None of the above, but in this section

9-XX CALCULUS OF VARIATIONS AND OPTIMAL CONTROL [See also 34H05, 93Exx.]

49-01 Elementary exposition (collegiate level)
49-02 Advanced exposition (research surveys, etc.)
49-03 Historical
49-04 Explicit machine computation and programs (not the theory of computation or programming)
49-06 Collections of papers; proceedings of conferences

49Axx Existence theory for optimal solutions
49A05 Free problems in one independent variable
49A10 Problems involving ordinary differential equations
49A15 Free problems in two or more independent variables
49A20 Problems involving partial differential equations
49A25 Problems in abstract spaces
49A30 Problems involving functional relations other than differential equations
49A35 Optimal solutions-belonging to restricted classes (bang-bang controls, etc.)
49A40 Minimax problems
49A50 Topology of solutions, weak and strong minima, semicontinuity, convexity, orientor fields
49A99 None of the above, but in this section

49Bxx Necessary conditions and sufficient conditions for optimality
49B05 Free problems in one independent variable
49B10 Problems involving ordinary differential equations
49B15 Optimal solutions belonging to restricted classes
49B20 Free problems in two or more independent variables
49B25 Problems involving partial differential equations
49B30 Problems in abstract spaces
49B35 Problems involving functional relations other than differential equations
49B40 Minimax problems
49B50 Sensitivity of optimal solutions in the presence of perturbations
49B99 None of the above, but in this section

49Cxx Carathéodory, Hamilton-Jacobi theories, including dynamic programming
49C05 Free problems and problems involving ordinary differential equations
49C10 Free problems and problems involving partial differential equations
49C15 Problems in abstract spaces or involving functional relations other than differential equations
49C99 None of the above, but in this section

49Dxx Methods of successive approximations
49D05 Methods based on necessary conditions
49D10 Methods of steepest descent type
49D15 Methods of Newton-Raphson, Galerkin and Ritz types
49D20 Methods of relaxation type

49D25 Finite difference methods
49D30 Other methods, not based on necessary conditions (penalty function, etc.)
49D35 Methods of linear programming type
49D40 Methods of quadratic programming type
49D45 Methods of convex programming type
49D99 None of the above, but in this section

49Exx Controllability and geometry of control problems
49E05 General dependence on controls
49E10 Orientor fields (contingency equations)
49E15 Attainable sets, controllability
49E20 Interrelations between stability problems and optimization problems
49E25 Effect of perturbations on controllability
49E30 Relations between controllability and optimal solutions
49E99 None of the above, but in this section

49Fxx Manifolds
49F05 Exterior differential forms, invariant integrals (Cartan theory) [See also 58A15.]
49F10 Minimal surfaces
49F15 Morse theory in Hilbert and other spaces [See also 58Exx.]
49F20 Geometric measure and integration theory, integral and normed currents, flat chains and cochains, varifolds [See also 58A25.]
49F22 Existence and structure of solutions to variational problems in geometric measure-theoretic setting
49F25 Surface area
49F99 None of the above, but in this section

49Gxx Variational methods and eigenvalues
49G05 Variational approach to eigenvalues
49G10 Rayleigh-Ritz methods
49G15 Weinstein and Aronsajn methods, intermediate problems
49G20 Linear operators in Hilbert spaces
49G99 None of the above, but in this section

49H05 Variational principles of physics [See also 70Hxx, 81A09.]

50-XX GEOMETRY [For algebraic geometry, see 14-XX.]

50-01 Elementary exposition (collegiate level)
50-02 Advanced exposition (research surveys, etc.)
50-03 Historical
50-04 Explicit machine computation and programs (not the theory of computation or programming)
50-06 Collections of papers; proceedings of conferences

50Axx Foundations
50A05 Euclidean
50A10 Non-Euclidean
50A15 Transformation groups
50A20 Algebraic characterizations [See also 06A75, 12K05, 16A76, 16A78, 16A80, 17D05, 17E05, 20N10.]
50A25 Models [See also 02H15.]
50A30 Length, area, volume
50A99 None of the above, but in this section

50Bxx Euclidean geometry (including equiform geometry)
50B05 Constructions
50B10 Metric formulae
50B15 Inequalities
50B20 Geometry of circles
50B25 Euclidean and equiform geometry over fields other than the reals
50B30 Regular figures, division of space [See also 20H15.]
50B35 Other groups generated by reflections
50B99 None of the above, but in this section

50Cxx Other metric geometries
50C05 Elliptic and hyperbolic, general
50C10 Elliptic and hyperbolic inequalities
50C15 Groups generated by elliptic and hyperbolic reflections [See also 20H10.]
50C20 Hyperbolic convexity
50C25 Other metric geometries

50Dxx Geometries of other transformation groups
50D05 Affine geometry, general
50D10 Affine geometry, subgroups (centroaffine, equiaffine)

- 50D15 Descriptive geometry
- 50D20 Projective geometry over the reals
- 50D25 Projective geometry over other infinite fields
- 50D30 Projective geometry over finite fields
- 50D35 Projective geometry over combinatorial or nonfield structures
- 50D40 Line geometry
- 50D45 Circle and sphere geometry: Lie, Laguerre, Möbius
- 50D50 Geometries of other space elements
- 50D99 None of the above, but in this section

52-XX CONVEX SETS AND GEOMETRIC INEQUALITIES

- 52-01 Elementary exposition (collegiate level)
- 52-02 Advanced exposition (research surveys, etc.)
- 52-03 Historical
- 52-04 Explicit machine computation and programs (not the theory of computation or programming)
- 52-06 Collections of papers; proceedings of conferences
- 52A05 Convex sets without dimension restrictions
- 52A10 Convex sets in 2 dimensions
- 52A15 Convex sets in 3 dimensions
- 52A20 Convex sets in n dimensions
- 52A25 Convex polyhedra
- 52A30 Star-shaped sets
- 52A35 Helly-type theorems
- 52A40 Inequalities and extremum problems
- 52A45 Packing and covering [See also 05B40, 10E30, 50B30.]
- 52A50 Hilbert geometry and other distance geometries
- 52A55 Spherical convexity [See also 50C20.]
- 52A99 Miscellaneous topics

53-XX DIFFERENTIAL GEOMETRY [For differential topology, see 57Dxx. For foundational questions of differentiable manifolds, see 58Axx.]

- 53-01 Elementary exposition (collegiate level)
- 53-02 Advanced exposition (research surveys, etc.)
- 53-03 Historical
- 53-06 Collections of papers; proceedings of conferences
- 53Axx **Classical differential geometry**
- 53A05 Curves and surfaces in Euclidean space
- 53A10 Minimal surfaces
- 53A15 Affine differential geometry
- 53A20 Projective differential geometry
- 53A25 Differential line geometry
- 53A30 Conformal differential geometry
- 53A35 Non-Euclidean differential geometry
- 53A40 Other special differential geometries
- 53A45 Vector and tensor analysis
- 53A50 Spinor analysis
- 53A55 Differential invariants (local theory), geometric objects
- 53A99 None of the above, but in this section

53Bxx Local differential geometry

- 53B05 Affine connections
- 53B10 Projective connections
- 53B15 Other connections
- 53B20 Local Riemannian geometry
- 53B25 Submanifolds
- 53B30 Lorentz metrics, indefinite metrics
- 53B35 Hermitian and Kählerian structures [See also 32Cxx.]
- 53B40 Finsler spaces and generalizations (areal metrics)
- 53B99 None of the above, but in this section

53Cxx Global differential geometry [For related bundle theory, see 55Fxx, 57Dxx.]

- 53C05 Connections
- 53C10 G -structures
- 53C15 Almost complex, contact, symplectic, almost product structures, etc.
- 53C20 Riemannian manifolds, including pinching [See also 58B20.]
- 53C25 Special Riemannian manifolds (Einstein, Sasakian, etc.)
- 53C30 Homogeneous manifolds [See also 57F15.]
- 53C35 Symmetric spaces [See also 57F15.]
- 53C40 Submanifolds, isometric imbeddings [See also 57D40.]
- 53C45 Global surface theory (convex surfaces à la A. D.

Aleksandrov)

- 53C50 Lorentz manifolds, manifolds with indefinite metrics
- 53C55 Hermitian and Kählerian structures [See also 58B20.]
- 53C60 Finsler spaces and generalizations (areal metrics) [See also 58B20.]
- 53C65 Integral geometry, differential forms, currents, etc.
- 53C70 Direct methods (G -spaces of Busemann, etc.)
- 53C75 Geometric orders, order geometry
- 53C99 None of the above, but in this section

54-XX GENERAL TOPOLOGY [For the topology of manifolds of all dimensions, see 57Axx.]

- 54-01 Elementary exposition (collegiate level)
- 54-02 Advanced exposition (research surveys, etc.)
- 54-03 Historical
- 54-06 Collections of papers; proceedings of conferences

54Axx Generalities

- 54A05 Topological spaces and generalizations (closure spaces, etc.)
- 54A10 Change of topology, comparison of topologies
- 54A15 Syntopogeneous structures
- 54A20 Convergence (general theory) and limits
- 54A25 Cardinality properties (discrete subsets, weight, etc.)
- 54A99 None of the above, but in this section

54Bxx Basic constructions

- 54B05 Subspaces
- 54B10 Product spaces
- 54B15 Quotient spaces, decompositions
- 54B17 Adjunction spaces and similar constructions
- 54B20 Hyperspaces
- 54B25 Sums, inverse limits
- 54B30 Categorical methods
- 54B99 None of the above, but in this section

54Cxx Maps and general types of spaces defined by maps

- 54C05 Continuous maps
- 54C10 Special maps: open, closed, perfect, almost open, light, etc.
- 54C15 Retraction
- 54C20 Extension
- 54C25 Imbedding
- 54C30 Real-valued functions [See also 26-XX.]
- 54C35 Function spaces [See also 58D15.]
- 54C40 $C(X)$; algebraic techniques (ideals, etc.) [See also 46J10.]
- 54C45 C - and C^* -imbedding
- 54C50 Zero sets, Baire sets, and functions [See also 26A21.]
- 54C55 Absolute neighborhood extensor, absolute extensor, absolute neighborhood retract (ANR), absolute retract spaces (general properties)
- 54C56 Borsuk's theory of shapes
- 54C60 Set-valued maps
- 54C65 Selections
- 54C99 None of the above, but in this section

54Dxx Fairly general properties

- 54D05 Connected and locally connected spaces (general aspects)
- 54D10 Separation axioms, $T_0 - T_3$
- 54D15 Higher separation axioms (completely regular, normal, perfectly or collectionwise normal, etc.)
- 54D20 Covering properties: Lindelöf, (m, n) -compact, paracompact, pointwise paracompact, etc.
- 54D25 " P -minimal" and " P -closed" spaces
- 54D30 Compact spaces and generalizations
- 54D35 Compactifications, etc.
- 54D40 Remainders
- 54D45 Local compactness, σ -compactness
- 54D50 k -spaces
- 54D55 Sequential spaces
- 54D60 Realcompactness and realcompactification
- 54D99 None of the above, but in this section

54Exx Spaces with richer structures

- 54E05 Proximity structures and generalizations
- 54E10 p -maps
- 54E15 Uniform structures and generalizations
- 54E20 Stratifiable spaces, cosmic spaces, etc.
- 54E25 Semimetric spaces

- 54E30 Moore spaces
 54E35 Metric spaces, metrizability
 54E40 Isometries, contractions, expansions
 54E45 Compact (locally compact) metric spaces
 54E50 Complete metric spaces
 54E55 Bitopologies
 54E60 *CW*-complexes, triangulable spaces
 54E99 None of the above, but in this section
- 54Fxx Special properties**
 54F05 Ordered topological spaces, partially ordered spaces [See also 06A45.]
 54F15 Continua and generalizations
 54F20 Special types of continua
 54F25 Peano spaces and generalizations
 54F30 Cyclic elements
 54F35 Higher dimensional local connectedness [See also 55Bxx, 55Cxx.]
 54F40 Compact (locally compact) absolute neighborhood retracts
 54F45 Dimension theory [See also 55C10.]
 54F50 Spaces of dimension < 1 ; curves, dendrites [See also 26A03.]
 54F55 Unicoherence, multicoherence
 54F60 Maps into S_n
 54F65 Topological characterizations of particular spaces
 54F99 None of the above, but in this section
- 54Gxx Peculiar spaces**
 54G05 Extremely disconnected spaces, *F*-spaces, etc.
 54G10 *P*-spaces
 54G15 Pathological spaces
 54G20 Counterexamples
 54G99 None of the above, but in this section
- 54Hxx Connections with other structures, applications**
 54H05 Descriptive set theory (topological aspects of Borel, analytic, projective, etc. sets) [See also 02K30, 04A15, 26A21, 28A05.]
 54H10 Topological representations of algebraic systems [See also 22-XX.]
 54H15 Transformation groups and semigroups [See also 20Mxx, 22-XX, 57Exx.]
 54H20 Topological dynamics [See also 28A65, 34C35, 58Fxx.]
 54H25 Fixed-point and coincidence theorems [See also 47H10, 55C20.]
 54H99 None of the above, but in this section
- 54J05 Nonstandard topology**
- 55-XX ALGEBRAIC TOPOLOGY**
 55-01 Elementary exposition (collegiate level)
 55-02 Advanced exposition (research surveys, etc.)
 55-03 Historical
 55-04 Explicit machine computation and programs (not the theory of computation or programming)
 55-06 Collections of papers; proceedings of conferences
- 55Axx Low-dimensional topology [See also 57Axx.]**
 55A05 Fundamental group, presentations, free differential calculus [See also 20E40.]
 55A10 Covering spaces, branched coverings
 55A15 Graphs and map coloring [For other graph theory, see 05Cxx.]
 55A20 Two-dimensional complexes
 55A25 Knots and links [For the high-dimensional case, see 57C45.]
 55A30 Wild knots and surfaces, etc.
 55A35 Dehn's Lemma, sphere theorem, loop theorem, asphericity
 55A40 Characterizations of E^3 and S^3 (Poincaré conjecture)
 55A99 None of the above, but in this section
- 55Bxx Homology and cohomology theories**
 55B05 Čech types
 55B10 Singular theory
 55B15 *K*-theory [For algebraic *K*-theory, see 18F25.]
 55B20 Generalized (extraordinary) homology and cohomology theories, spectra
 55B25 Homology with local coefficients, equivariant cohomology
 55B30 Sheaf cohomology [See also 18F20, 32C35, 32L10.]
- 55B35 Other homology theories
 55B40 Axioms for homology theory and uniqueness theorems
 55B45 Products and intersections
 55B99 None of the above, but in this section
- 55Cxx Classical topics [For the topology of Euclidean spaces and manifolds, see 57A05, 57A10, 57A15.]**
 55C05 Duality
 55C10 Dimension theory [See also 54F45.]
 55C15 Absolute neighborhood retracts [See also 54C55.]
 55C20 Fixed points and coincidences [See also 54H25.]
 55C25 Degree
 55C30 Ljusternik-Schnirelman category of a space
 55C35 Finite groups of transformations (Smith theory)
 55C99 None of the above, but in this section
- 55Dxx Homotopy theory [For simple homotopy type, see 57C10.]**
 55D05 Homotopy extension properties, cofibrations
 55D10 Homotopy equivalences
 55D15 Classification of homotopy type
 55D20 Eilenberg-MacLane spaces
 55D25 Spanier-Whitehead duality
 55D30 Eckmann-Hilton duality
 55D35 Loop spaces
 55D40 Suspensions
 55D45 *H*-spaces and duals
 55D50 Category and cocategory, etc.
 55D99 None of the above, but in this section
- 55Exx Homotopy groups**
 55E05 Homotopy groups, general; sets of homotopy classes
 55E10 Stable homotopy groups
 55E15 Whitehead products and generalizations
 55E20 Homotopy groups of wedges, joins, and simple spaces
 55E25 Hopf invariants
 55E30 Homotopy groups of triads, *n*-ads
 55E35 Operations in homotopy groups
 55E40 Homotopy groups of spheres
 55E45 Stable homotopy of spheres
 55E50 The *J*-morphism
 55E55 Cohomotopy groups
 55E99 None of the above, but in this section
- 55Fxx Fiber spaces and bundles [See also 18F15.]**
 55F05 Fiber spaces
 55F10 Fiber bundles
 55F15 Classification
 55F20 Spectral sequences and homology of fiber spaces [See also 55Hxx.]
 55F25 Sphere bundles and vector space bundles
 55F35 Classifying spaces of groups and *H*-spaces
 55F40 Homology of classifying spaces, characteristic classes
 55F45 Homology and homotopy of *BO* and *BU*; Bott periodicity
 55F50 Stable classes of vector space bundles, *K*-theory [For algebraic *K*-theory, see 18F25.]
 55F55 Fiberings with singularities
 55F60 Microbundles and block bundles
 55F65 Generalizations of fiber spaces and bundles
 55F99 None of the above, but in this section
- 55Gxx Operations and obstructions**
 55G05 Primary cohomology operations
 55G10 Steenrod algebra
 55G15 Symmetric products, cyclic products
 55G20 Secondary and higher cohomology operations
 55G25 *K*-theory operations and generalized cohomology operations
 55G30 Massey products
 55G35 Obstruction theory
 55G36 Extension and compression of mappings
 55G37 Classification of mappings
 55G40 Sectioning fiber spaces and bundles
 55G45 Postnikov systems, *k*-invariants
 55G99 None of the above, but in this section
- 55Hxx Spectral sequences**
 55H05 General

- 55H10 Serre spectral sequences
- 55H15 Adams spectral sequences
- 55H20 Eilenberg-Moore spectral sequences
- 55H25 Generalized cohomology
- 55H99 None of the above, but in this section
- 55Jxx Applied homological algebra [See also 18Gxx.]**
- 55J05 Abstract complexes
- 55J10 Semisimplicial complexes
- 55J15 Chain complexes
- 55J20 Universal coefficient theorems, Bockstein operator
- 55J25 Homology of a product, Künneth formula
- 55J30 Duality
- 55J99 None of the above, but in this section

57-XX MANIFOLDS AND CELL COMPLEXES [For complex manifolds, see 32C10.]

- 57-01 Elementary exposition (collegiate level)
- 57-02 Advanced exposition (research surveys, etc.)
- 57-03 Historical
- 57-06 Collections of papers; proceedings of conferences
- 57Axx Topological manifolds**
- 57A05 Topology of E_2 , 2-manifolds
- 57A10 Topology of E_3 , 3-manifolds [See also 55Axx.]
- 57A15 Topology of E_n , n -manifolds ($3 < n < \infty$)
- 57A17 Topology of topological vector spaces
- 57A20 Topology of infinite-dimensional manifolds [See also 58Bxx.]
- 57A30 Engulfing
- 57A35 Imbeddings and immersions
- 57A40 Neighborhoods of submanifolds
- 57A45 Flatness
- 57A50 $S^{n-1} \subset E^n$, Schoenflies problem
- 57A55 Microbundles
- 57A60 Cellularity
- 57A65 Algebraic topology of manifolds
- 57A70 Cobordism
- 57A99 None of the above, but in this section
- 57Bxx Generalized manifolds [See also 18F15.]**
- 57B05 Local properties
- 57B10 Poincaré duality spaces
- 57B99 None of the above, but in this section
- 57Cxx PL-topology**
- 57C05 The general topology of complexes
- 57C10 Simple homotopy type, Whitehead torsion, Reidemeister-Franz torsion, etc.
- 57C15 Triangulating manifolds
- 57C20 Cobordism
- 57C25 Comparison of PL-structures: classification, Hauptvermutung
- 57C30 Engulfing
- 57C35 Imbeddings and immersions
- 57C40 Regular neighborhoods
- 57C45 Knots and links (in high dimensions) [for the low-dimensional case, see 55A25.]
- 57C50 Microbundles and block bundles [See also 55F60.]
- 57C55 Approximations
- 57C99 None of the above, but in this section
- 57Dxx Differential topology [For foundational questions of differentiable manifolds, see 58Axx; for infinite-dimensional manifolds, see 58Bxx.]**
- 57D05 Triangulating
- 57D10 Smoothing
- 57D12 Smooth approximations
- 57D15 Specialized structures on manifolds (spin manifolds, frame manifolds, etc.)
- 57D20 Characteristic classes
- 57D25 Vector fields, frame fields, etc.
- 57D30 Foliations
- 57D35 Differentiable mappings
- 57D40 Imbeddings and immersions
- 57D45 Singularities of differentiable mappings
- 57D50 Diffeomorphisms
- 57D55 Differentiable structures

- 57D60 Homotopy spheres, Poincaré conjecture
- 57D65 Surgery and handlebodies
- 57D70 Critical points and critical submanifolds
- 57D75 O - and SO -cobordism
- 57D80 h - and s -cobordism
- 57D85 Equivariant cobordism
- 57D90 Other types of cobordism
- 57D95 Realizing cycles by submanifolds
- 57D99 None of the above, but in this section
- 57Exx Topological transformation groups [See also 20E40, 22-XX, 54H15, 58D05.]**
- 57E05 Topological properties of groups of homeomorphisms
- 57E10 Compact groups of homeomorphisms
- 57E15 Compact Lie groups of differentiable transformations
- 57E20 Noncompact Lie groups of transformations
- 57E25 Groups acting on specific manifolds
- 57E30 Discontinuous groups of transformations
- 57E99 None of the above, but in this section
- 57Fxx Homology and homotopy of topological groups and related structures**
- 57F05 Hopf algebras [See also 16A24.]
- 57F10 Homology of Lie groups
- 57F15 Homology of homogeneous spaces of Lie groups
- 57F20 Homotopy groups of topological groups and homogeneous spaces
- 57F25 Homology of H -spaces
- 57F30 Bar and cobar constructions
- 57F35 Applications of Eilenberg-Moore spectral sequences [See also 55F20, 55H20.]
- 57F99 None of the above, but in this section
- 58-XX GLOBAL ANALYSIS, ANALYSIS ON MANIFOLDS [For real-analytic and complex manifolds, see 32Cxx; for geometric integration theory, see 49F20, 49F22.]**
- 58-01 Elementary exposition (collegiate level)
- 58-02 Advanced exposition (research surveys, etc.)
- 58-03 Historical
- 58-06 Collections of papers; proceedings of conferences
- 58Axx General theory of differentiable manifolds**
- 58A05 Differentiable manifolds, foundations
- 58A10 Differential forms
- 58A15 Exterior differential systems (Cartan theory) [For variational problems, see 49F05.]
- 58A20 Jets
- 58A25 Curvatures
- 58A30 Vector distributions (sub-bundles of the tangent bundles)
- 58A99 None of the above, but in this section
- 58Bxx Infinite-dimensional manifolds [See also 57A20.]**
- 58B05 Homotopy and topological questions
- 58B10 Differentiable and holomorphic questions
- 58B15 Fredholm structures
- 58B20 Riemannian, Finsler, and other geometric structures
- 58B99 None of the above, but in this section
- 58Cxx Calculus on manifolds**
- 58C05 Real-valued functions
- 58C10 Holomorphic maps
- 58C15 Implicit function theorems
- 58C20 Differentiation theory (Gâteaux, Fréchet, etc.)
- 58C25 Differentiable maps and singularities
- 58C99 None of the above, but in this section
- 58Dxx Spaces and manifolds of mappings**
- 58D05 Groups of diffeomorphisms and homeomorphisms as manifolds [See also 22Exx.]
- 58D10 Spaces of imbeddings and immersions
- 58D15 Manifolds of mappings [See also 54C35.]
- 58D99 None of the above, but in this section
- 58Exx Critical point theory [For the finite-dimensional case, see 57D70; for variational problems, see 49F15.]**
- 58E05 Abstract theory (Morse theory, Ljusternik-Schnirelman theory, etc.)
- 58E10 Application to the theory of geodesics
- 58E15 Application to extremal problems in several variables

- 58E99 None of the above, but in this section
- 58Fxx Differentiable dynamic systems [For abstract and symbolical topological dynamics, see 28A65, 34C35, 54H20.]**
- 58F05 Hamiltonian and other special systems
- 58F10 Stability theory
- 58F15 Hyperbolic structures (expanding maps, Anosov systems, etc.)
- 58F20 Periodic points and zeta functions
- 58F99 None of the above, but in this section
- 58Gxx Differential operators on manifolds**
- 58G05 Elliptic complexes [See also 35N15.]
- 58G10 Index theorems and fixed point theorems
- 58G15 Pseudodifferential operators on manifolds
- 58G99 None of the above, but in this section
- 58H05 Pseudogroups (infinite-dimensional Lie groups) and deformations of structures [See also 22E65.]**

0-XX PROBABILITY THEORY AND STOCHASTIC PROCESSES [For additional applications, see 10Kxx, 42A36, 62-XX, 90-XX, 92-XX, 93-XX, 94-XX.]

- 60-01 Elementary exposition (collegiate level)
- 60-02 Advanced exposition (research surveys, etc.)
- 60-03 Historical
- 60-04 Explicit machine computation and programs (not the theory of computation or programming)
- 60-06 Collections of papers; proceedings of conferences
- 60Axx Axioms, foundations**
- 60A05 General questions
- 60A10 Probabilistic measure theory
- 60A99 None of the above, but in this section
- 60Bxx Probability theory on algebraic and topological structures**
- 60B05 Probability measures on topological spaces
- 60B10 Convergence of probability measures, invariance theorems [See also 28A65.]
- 60B15 Probability measures on groups, Fourier transforms, factorization
- 60B99 None of the above, but in this section
- 60C05 Combinatorial probability**
- 60D05 Geometric probability**
- 60E05 Distributions, characteristic functions**
- 60Fxx Limit theorems**
- 60F05 Central limit and other weak theorems
- 60F10 Large deviations
- 60F15 Strong theorems [See also 28A65.]
- 60F20 Zero-one laws
- 60F99 None of the above, but in this section
- 60Gxx Stochastic processes**
- 60G05 Foundations of stochastic processes
- 60G10 Stationary processes
- 60G15 Gaussian processes
- 60G17 Sample path properties
- 60G20 Generalized stochastic processes
- 60G25 Prediction theory [See also 62M20.]
- 60G30 Continuity and singularity of induced measures
- 60G35 Applications (signal detection, filtering, etc.) [See also 94A05.]
- 60G40 Stopping times
- 60G45 Martingale theory
- 60G50 Sums of independent random variables
- 60G55 Point processes, random measures, etc.
- 60G99 None of the above, but in this section
- 60Hxx Stochastic analysis**
- 60H05 Stochastic integrals
- 60H10 Stochastic ordinary differential equations [See also 34F05.]
- 60H15 Stochastic partial differential equations
- 60H20 Stochastic integral equations
- 60H99 None of the above, but in this section
- 60Jxx Markov processes**
- 60J05 Markov processes with discrete parameter

- 60J10 Markov chains
- 60J15 Random walk
- 60J20 Applications of discrete Markov processes (social mobility, learning theory, industrial processes, etc.)
- 60J25 Markov processes with continuous parameter
- 60J30 Processes with independent increments
- 60J35 Transition functions, generators and resolvents [See also 47D05.]
- 60J40 Hunt processes
- 60J45 Probabilistic potential theory [See also 31-XX.]
- 60J50 Boundary theory
- 60J55 Local time and additive functionals
- 60J60 Diffusion processes [See also 28A65.]
- 60J65 Brownian motion
- 60J70 Applications of diffusion theory (population genetics, absorption problems, etc.)
- 60J75 Jump processes
- 60J80 Branching processes (Galton-Watson, birth-and-death, etc.)
- 60J85 Applications of branching processes [See also 90Bxx.]
- 60J99 None of the above, but in this section
- 60Kxx Special processes**
- 60K05 Renewal theory
- 60K10 Applications (reliability, demand theory, etc.)
- 60K15 Markov renewal processes, semi-Markov processes
- 60K20 Applications of Markov renewal processes (reliability, queueing networks, etc.)
- 60K25 Queueing theory
- 60K30 Applications (congestion, allocation, storage, traffic, etc.) [See also 60J80.]
- 60K35 Interacting random processes, statistical mechanics type models
- 60K99 None of the above, but in this section

62-XX STATISTICS

- 62-01 Elementary exposition (collegiate level)
- 62-02 Advanced exposition (research surveys, etc.)
- 62-03 Historical
- 62-04 Explicit machine computation and programs (not the theory of computation or programming)
- 62-06 Collections of papers; proceedings of conferences
- 62Axx Foundations**
- 62A05 Invariance and group considerations
- 62A10 The likelihood approach
- 62A15 The Bayesian approach
- 62A99 None of the above, but in this section
- 62Bxx Sufficiency**
- 62B05 Sufficient statistics and fields
- 62B10 Statistical information theory
- 62B15 Comparison of experiments
- 62B20 Measure-theoretic results, etc.
- 62B99 None of the above, but in this section
- 62Cxx Decision theory [For game theory, see 90Dxx.]**
- 62C05 General considerations
- 62C07 Complete class results
- 62C10 Bayesian problems; characterization of Bayes procedures
- 62C15 Admissibility
- 62C25 Compound decision problems
- 62C99 None of the above, but in this section
- 62D05 Sampling theory, sample surveys**
- 62Exx Distribution theory**
- 62E10 Characterization and structure theory
- 62E15 Distribution of statistics
- 62E20 Asymptotic theory
- 62E25 Monte Carlo studies
- 62E99 None of the above, but in this section
- 62Fxx Parametric inference**
- 62F05 Hypothesis testing
- 62F07 Ranking and selection
- 62F10 Estimation
- 62F15 Bayesian inference
- 62F20 Asymptotic efficiency
- 62F25 Tolerance and confidence regions

- 62F99 None of the above, but in this section
- 62Gxx Nonparametric inference**
- 62G05 Estimation
- 62G10 Hypothesis testing
- 62G15 Tolerance and confidence regions
- 62G20 Asymptotic efficiency
- 62G25 Quick and easy methods
- 62G30 Order statistics
- 62G35 Robustness
- 62G99 None of the above, but in this section
- 62Hxx Multivariate analysis**
- 62H05 Characterization and structure theory
- 62H10 Distribution of statistics
- 62H15 Hypothesis testing
- 62H20 Correlation analysis, canonical correlation
- 62H25 Factor analysis and principal components
- 62H30 Classification and discrimination
- 62H99 None of the above, but in this section
- 62Jxx Linear inference**
- 62J05 Regression analysis
- 62J10 Analysis of variance and covariance
- 62J15 Paired and multiple comparisons
- 62J99 None of the above, but in this section
- 62Kxx Experimental design [See also 05Bxx.]**
- 62K05 Optimal designs
- 62K10 Block designs
- 62K15 Factorial designs
- 62K99 None of the above, but in this section
- 62Lxx Sequential methods**
- 62L05 Sequential design
- 62L10 Sequential analysis
- 62L12 Sequential estimation
- 62L15 Optimal stopping [See also 60G40.]
- 62L20 Stochastic approximation
- 62L99 None of the above, but in this section
- 62Mxx Inference from stochastic processes**
- 62M05 Markov processes
- 62M10 Time series, auto-correlation, regression, etc.
- 62M15 Spectral analysis of time series
- 62M20 Prediction [See also 60G25.]
- 62M99 None of the above, but in this section
- 62Nxx Engineering statistics**
- 62N05 Reliability and life testing
- 62N10 Quality control [See also 90Bxx.]
- 62N15 Stochastic differential and difference equations [See also 34F05, 60H10, 93Exx.]
- 62N99 None of the above, but in this section
- 62Pxx Applications [See also 82-XX, 90-XX, 92-XX.]**
- 62P05 Actuarial mathematics
- 62P10 Biometrics
- 62P15 Psychometrics
- 62P20 Econometrics
- 62P25 Sociometrics
- 62P99 None of the above, but in this section
- 62Q05 Statistical tables**
- 65-XX NUMERICAL ANALYSIS**
- 65-01 Elementary exposition (collegiate level)
- 65-02 Advanced exposition (research surveys, etc.)
- 65-03 Historical
- 65-04 Explicit machine computation and programming (not the theory of computation or programming)
- 65-06 Collections of papers; proceedings of conferences
- 65A05 Tables**
- 65Bxx Acceleration of convergence**
- 65B05 Extrapolation to the limit, deferred corrections
- 65B10 Summation of series
- 65B15 Euler-Maclaurin formula
- 65B20 Poisson formula, etc.
- 65B99 None of the above, but in this section
- 65Cxx Numerical simulation [See also 68A55.]**
- 65C05 Monte Carlo methods
- 65C10 Random number generation
- 65C99 None of the above, but in this section
- 65Dxx Numerical approximation [Primarily algorithms; for theory, see 41-XX.]**
- 65D05 Interpolation
- 65D10 Smoothing, curve fitting
- 65D15 Algorithms for functional approximation
- 65D20 Computation of special functions, construction of tables
- 65D25 Numerical differentiation
- 65D30 Numerical integration, quadrature, cubature, etc.
- 65D99 None of the above, but in this section
- 65E05 Numerical methods in complex analysis (potential theory, etc.) [For numerical methods in conformal mapping, see 30A28.]**
- 65Fxx Numerical linear algebra**
- 65F05 Direct methods for linear systems and matrix inversion
- 65F10 Iterative methods for linear systems [See also 65N20.]
- 65F15 Eigenvalues, eigenvectors
- 65F20 Overdetermined systems, pseudoinverses
- 65F25 Orthogonalization
- 65F30 Other matrix algorithms
- 65F35 Matrix norms, conditioning, scaling [See also 15A12, 15A60.]
- 65F99 None of the above, but in this section
- 65G05 Roundoff error**
- 65Hxx Nonlinear algebraic or transcendental equations**
- 65H05 Single equations
- 65H10 Systems of equations
- 65H99 None of the above, but in this section
- 65J05 Numerical analysis in abstract spaces**
- 65K05 Mathematical programming and optimization techniques [Computational aspects; for algorithms and theory, see 49Exx and 90Cxx.]**
- 65Lxx Ordinary differential equations**
- 65L05 Initial value problems
- 65L10 Boundary value problems
- 65L15 Eigenvalue problems
- 65L99 None of the above, but in this section
- 65Mxx Partial differential equations, initial value problems**
- 65M05 Derivation of finite difference approximations
- 65M10 Stability and convergence of difference methods
- 65M15 Error bounds
- 65M20 Method of lines
- 65M25 Method of characteristics
- 65M30 Improperly posed problems
- 65M99 None of the above, but in this section
- 65Nxx Partial differential equations, boundary value problems**
- 65N05 Derivation of finite difference approximations
- 65N10 Convergence of difference methods
- 65N15 Error bounds
- 65N20 Solution of difference equations [See also 65F10.]
- 65N25 Eigenvalue problems
- 65N30 Rayleigh-Ritz and Galerkin methods
- 65N35 Collocation and related methods
- 65N99 None of the above, but in this section
- 65P05 Partial differential equations, miscellaneous problems**
- 65Q05 Difference and functional equations, recurrence relations**
- 65R05 Integral and integro-differential equations**
- 65S05 Graphical methods**
- 65T05 Harmonic analysis and synthesis**
- 68-XX COMPUTER SCIENCE [For papers involving machine computations and programs in a specific mathematical area, see section -04 in that area.]**
- 68-01 Elementary exposition (collegiate level)
- 68-02 Advanced exposition (research surveys, etc.)
- 68-03 Historical
- 68-06 Collections of papers; proceedings of conferences

- 68A05** Programming theory
- 68A10** Algorithms [See also 02E10.]
- 68A15** Symbolic computation
- 68A20** Computational complexity and efficiency
- 68A25** Automata theory [See also 02F10, 18B20, 94A30, 94A35.]
- 68A30** Linguistics, formal languages
- 68A35** Adaptive systems
- 68A40** Theorem proving
- 68A45** Artificial intelligence, pattern recognition
- 68A50** Information retrieval
- 68A55** Simulation [See also 65Cxx.]
- 68A99** Miscellaneous topics

.00 GENERAL APPLIED MATHEMATICS

MECHANICS OF PARTICLES AND SYSTEMS

- 70.00** General
- 70.01** History and biography
- 70.02** Logic and foundations
- 70.10** Number theory
- 70.15** Linear and multilinear algebra; matrix theory
- 70.16** Associative rings and algebras
- 70.17** Nonassociative rings and algebras
- 70.20** Group theory and generalizations
- 70.22** Topological groups, Lie groups
- 70.26** Real functions
- 70.28** Measure and integration
- 70.30** Functions of a complex variable
- 70.31** Potential theory
- 70.33** Special functions
- 70.34** Ordinary differential equations
- 70.35** Partial differential equations
- 70.39** Finite differences and functional equations
- 70.40** Sequences, series, summability
- 70.41** Approximations and expansions
- 70.42** Fourier analysis
- 70.45** Integral equations
- 70.46** Functional analysis
- 70.47** Operator theory
- 70.49** Calculus of variations and optimal control
- 70.50** Geometry
- 70.53** Differential geometry
- 70.54** General topology
- 70.57** Manifolds and cell complexes
- 70.58** Global analysis, analysis on manifolds
- 70.60** Probability theory and stochastic processes
- 70.62** Statistics
- 70.65** Numerical analysis

3 MECHANICS OF SOLIDS

- 73.00** General
- 73.01** History and biography
- 73.02** Logic and foundations
- 73.05** Combinatorics
- 73.06** Order, lattices, ordered algebraic structures
- 73.15** Linear and multilinear algebra; matrix theory
- 73.17** Nonassociative rings and algebras
- 73.20** Group theory and generalizations
- 73.22** Topological groups, Lie groups
- 73.26** Real functions
- 73.28** Measure and integration
- 73.30** Functions of a complex variable
- 73.31** Potential theory
- 73.32** Several complex variables and analytic spaces
- 73.33** Special functions
- 73.34** Ordinary differential equations
- 73.35** Partial differential equations
- 73.39** Finite differences and functional equations
- 73.40** Sequences, series, summability
- 73.41** Approximations and expansions
- 73.42** Fourier analysis
- 73.43** Abstract harmonic analysis
- 73.44** Integral transforms, operational calculus
- 73.45** Integral equations
- 73.46** Functional analysis

- 73.47** Operator theory
- 73.49** Calculus of variations and optimal control
- 73.53** Differential geometry
- 73.54** General topology
- 73.55** Algebraic topology
- 73.57** Manifolds and cell complexes
- 73.58** Global analysis, analysis on manifolds
- 73.60** Probability theory and stochastic processes
- 73.62** Statistics
- 73.65** Numerical analysis

76 FLUID MECHANICS, ACOUSTICS

- 76.00** General
- 76.01** History and biography
- 76.02** Logic and foundations
- 76.05** Combinatorics
- 76.06** Order, lattices, ordered algebraic structures
- 76.15** Linear and multilinear algebra; matrix theory
- 76.20** Group theory and generalizations
- 76.22** Topological groups, Lie groups
- 76.26** Real functions
- 76.28** Measure and integration
- 76.30** Functions of a complex variable
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- 76.42** Fourier analysis
- 76.44** Integral transforms, operational calculus
- 76.45** Integral equations
- 76.46** Functional analysis
- 76.47** Operator theory
- 76.49** Calculus of variations and optimal control
- 76.50** Geometry
- 76.52** Convex sets and geometric inequalities
- 76.53** Differential geometry
- 76.54** General topology
- 76.57** Manifolds and cell complexes
- 76.58** Global analysis, analysis on manifolds
- 76.60** Probability theory and stochastic processes
- 76.62** Statistics
- 76.65** Numerical analysis

78 OPTICS, ELECTROMAGNETIC THEORY

- 78.00** General
- 78.01** History and biography
- 78.05** Combinatorics
- 78.06** Order, lattices, ordered algebraic structures
- 78.20** Group theory and generalizations
- 78.22** Topological groups, Lie groups
- 78.26** Real functions
- 78.30** Functions of a complex variable
- 78.31** Potential theory
- 78.32** Several complex variables and analytic spaces
- 78.33** Special functions
- 78.34** Ordinary differential equations
- 78.35** Partial differential equations
- 78.39** Finite differences and functional equations
- 78.41** Approximations and expansions
- 78.42** Fourier analysis
- 78.44** Integral transforms, operational calculus
- 78.45** Integral equations
- 78.46** Functional analysis
- 78.47** Operator theory
- 78.49** Calculus of variations and optimal control
- 78.50** Geometry
- 78.53** Differential geometry
- 78.55** Algebraic topology
- 78.58** Global analysis, analysis on manifolds
- 78.60** Probability theory and stochastic processes
- 78.62** Statistics
- 78.65** Numerical analysis

80 CLASSICAL THERMODYNAMICS, HEAT TRANSFER

- 80.00 General
- 80.01 History and biography
- 80.02 Logic and foundations
- 80.05 Combinatorics
- 80.06 Order, lattices, ordered algebraic structures
- 80.15 Linear and multilinear algebra; matrix theory
- 80.20 Group theory and generalizations
- 80.22 Topological groups, Lie groups
- 80.26 Real functions
- 80.28 Measure and integration
- 80.30 Functions of a complex variable
- 80.31 Potential theory
- 80.33 Special functions
- 80.34 Ordinary differential equations
- 80.35 Partial differential equations
- 80.41 Approximations and expansions
- 80.42 Fourier analysis
- 80.44 Integral transforms, operational calculus
- 80.45 Integral equations
- 80.46 Functional analysis
- 80.47 Operator theory
- 80.49 Calculus of variations and optimal control
- 80.53 Differential geometry
- 80.54 General topology
- 80.55 Algebraic topology
- 80.58 Global analysis, analysis on manifolds
- 80.60 Probability theory and stochastic processes
- 80.62 Statistics
- 80.65 Numerical analysis
- 80.94 Information and communication, circuits, automata

81 QUANTUM MECHANICS

- 81.00 General
- 81.01 History and biography
- 81.02 Logic and foundations
- 81.04 Set theory
- 81.05 Combinatorics
- 81.06 Order, lattices, ordered algebraic structures
- 81.10 Number theory
- 81.14 Algebraic geometry
- 81.15 Linear and multilinear algebra; matrix theory
- 81.16 Associative rings and algebras
- 81.17 Nonassociative rings and algebras
- 81.18 Category theory, homological algebra
- 81.20 Group theory and generalizations
- 81.22 Topological groups, Lie groups
- 81.26 Real functions
- 81.28 Measure and integration
- 81.30 Functions of a complex variable
- 81.31 Potential theory
- 81.32 Several complex variables and analytic spaces
- 81.33 Special functions
- 81.34 Ordinary differential equations
- 81.35 Partial differential equations
- 81.39 Finite differences and functional equations
- 81.40 Sequences, series, summability
- 81.41 Approximations and expansions
- 81.42 Fourier analysis
- 81.43 Abstract harmonic analysis
- 81.44 Integral transforms, operational calculus
- 81.45 Integral equations
- 81.46 Functional analysis
- 81.47 Operator theory
- 81.49 Calculus of variations and optimal control
- 81.50 Geometry
- 81.52 Convex sets and geometric inequalities
- 81.53 Differential geometry
- 81.54 General topology
- 81.55 Algebraic topology
- 81.57 Manifolds and cell complexes
- 81.58 Global analysis, analysis on manifolds
- 81.60 Probability theory and stochastic processes

- 81.62 Statistics
- 81.65 Numerical analysis
- 81.94 Information and communication, circuits, automata

82 STATISTICAL PHYSICS, STRUCTURE OF MATTER

- 82.00 General
- 82.01 History and biography
- 82.02 Logic and foundations
- 82.05 Combinatorics
- 82.06 Order, lattices, ordered algebraic structures
- 82.10 Number theory
- 82.15 Linear and multilinear algebra; matrix theory
- 82.17 Nonassociative rings and algebras
- 82.20 Group theory and generalizations
- 82.22 Topological groups, Lie groups
- 82.26 Real functions
- 82.28 Measure and integration
- 82.30 Functions of a complex variable
- 82.31 Potential theory
- 82.32 Several complex variables and analytic spaces
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- 82.39 Finite differences and functional equations
- 82.40 Sequences, series, summability
- 82.41 Approximations and expansions
- 82.42 Fourier analysis
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- 82.54 General topology
- 82.55 Algebraic topology
- 82.58 Global analysis, analysis on manifolds
- 82.60 Probability theory and stochastic processes
- 82.62 Statistics
- 82.65 Numerical analysis

83 RELATIVITY

- 83.00 General
- 83.01 History and biography
- 83.02 Logic and foundations
- 83.05 Combinatorics
- 83.06 Order, lattices, ordered algebraic structures
- 83.10 Number theory
- 83.15 Linear and multilinear algebra; matrix theory
- 83.17 Nonassociative rings and algebras
- 83.20 Group theory and generalizations
- 83.22 Topological groups, Lie groups
- 83.26 Real functions
- 83.28 Measure and integration
- 83.30 Functions of a complex variable
- 83.31 Potential theory
- 83.32 Several complex variables and analytic spaces
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- 83.45 Integral equations
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- 83.53 Differential geometry
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- 83.55 Algebraic topology
- 83.57 Manifolds and cell complexes
- 83.58 Global analysis, analysis on manifolds
- 83.60 Probability theory and stochastic processes

- 83.62 Statistics
- 83.65 Numerical analysis

ASTRONOMY AND ASTROPHYSICS

- 85.00 General
- 85.01 History and biography
- 85.26 Real functions
- 85.30 Functions of a complex variable
- 85.31 Potential theory
- 85.33 Special functions
- 85.34 Ordinary differential equations
- 85.35 Partial differential equations
- 85.41 Approximations and expansions
- 85.42 Fourier analysis
- 85.44 Integral transforms, operational calculus
- 85.45 Integral equations
- 85.46 Functional analysis
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- 85.49 Calculus of variations and optimal control
- 85.50 Geometry
- 85.53 Differential geometry
- 85.54 General topology
- 85.55 Algebraic topology
- 85.57 Manifolds and cell complexes
- 85.58 Global analysis, analysis on manifolds
- 85.60 Probability theory and stochastic processes
- 85.62 Statistics
- 85.65 Numerical analysis

GEOPHYSICS

- 86.00 General
- 86.01 History and biography
- 86.05 Combinatorics
- 86.22 Topological groups, Lie groups
- 86.30 Functions of a complex variable
- 86.31 Potential theory
- 86.33 Special functions
- 86.34 Ordinary differential equations
- 86.35 Partial differential equations
- 86.41 Approximations and expansions
- 86.44 Integral transforms, operational calculus
- 86.45 Integral equations
- 86.47 Operator theory
- 86.49 Calculus of variations and optimal control
- 86.50 Geometry
- 86.52 Convex sets and geometric inequalities
- 86.53 Differential geometry
- 86.60 Probability theory and stochastic processes
- 86.62 Statistics
- 86.65 Numerical analysis

0-XX ECONOMICS, OPERATIONS RESEARCH, PROGRAMMING, GAMES

- 90-01 Elementary exposition (collegiate level)
- 90-02 Advanced exposition (research surveys, etc.)
- 90-03 Historical
- 90-04 Explicit machine computation and programs (not the theory of computation or programming)
- 90-06 Collections of papers; proceedings of conferences

90Axx Mathematical economics [For econometrics, see 62P20.]

- 90A05 Decision theory [See also 62Cxx.]
- 90A10 Utility theory
- 90A15 Economic models
- 90A20 Economic time series analysis [See also 62M10.]
- 90A99 None of the above, but in this section

90Bxx Operations research and management science

- 90B05 Logistics, inventory, storage
- 90B10 Flows in networks, deterministic
- 90B15 Flows in networks, probabilistic
- 90B20 Highway traffic
- 90B25 Reliability and maintenance [See also 60K20, 62N05.]
- 90B30 Production theory
- 90B35 Scheduling theory
- 90B40 Search theory

- 90B99 None of the above, but in this section

90Cxx Mathematical programming [For dynamic programming, see 49Cxx; for papers emphasizing calculus of variations or involving abstract spaces, see 49Dxx.]

- 90C05 Linear programming
- 90C10 Integer programming
- 90C15 Stochastic programming
- 90C20 Quadratic programming
- 90C25 Convex programming
- 90C30 Nonlinear programming
- 90C35 Network programming, programming in networks
- 90C40 Markov programming
- 90C45 Markov renewal programming
- 90C47 Dynamic programming
- 90C50 Applications of mathematical programming
- 90C99 None of the above, but in this section

90Dxx Game theory

- 90D05 2-person zero-sum games
- 90D10 *n*-person games, noncooperative
- 90D12 *n*-person games, cooperative, solution concepts
- 90D13 Games for a continuum of players
- 90D15 Multistage games, stochastic [See also 93E05.]
- 90D20 Multistage games, recursive
- 90D25 Differential games
- 90D30 Utility theory [See also 90A10.]
- 90D35 Decision theory [See also 62Cxx, 90A05.]
- 90D40 Game theory models [See also 65Cxx, 68A55.]
- 90D45 Applications of game theory
- 90D99 None of the above, but in this section

92-XX BIOLOGY AND BEHAVIORAL SCIENCES

- 92-01 Elementary exposition (collegiate level)
- 92-02 Advanced exposition (research surveys, etc.)
- 92-03 Historical
- 92-04 Explicit machine computation and programs (not the theory of computation or programming)
- 92-06 Collections of papers; proceedings of conferences
- 92A05 Biology [See also 73Pxx, 76Zxx.]
- 92A10 Genetics
- 92A15 Population dynamics, epidemiology
- 92A20 Sociology
- 92A25 Psychology
- 92A99 Miscellaneous topics

93-XX SYSTEMS, CONTROL [For optimal control (nonstochastic), see 49-XX.]

- 93-01 Elementary exposition (collegiate level)
- 93-02 Advanced exposition (research surveys, etc.)
- 93-03 Historical
- 93-04 Explicit machine computation and programs (not the theory of computation or programming)
- 93-06 Collections of papers; proceedings of conferences

93Axx General

- 93A05 Axiomatic system theory
- 93A10 General systems
- 93A15 Large scale systems (approximation techniques)
- 93A99 None of the above, but in this section

93Bxx Controllability, observability, and system structure

- 93B05 Controllability, observability, definitions and criteria
- 93B10 Canonical structure
- 93B15 Realizability of systems from input-output data
- 93B20 Minimal systems representations
- 93B25 Algebraic theory of time-invariant systems
- 93B30 System identification
- 93B35 Sensitivity
- 93B99 None of the above, but in this section

93Cxx Control systems, guided systems

- 93C05 Linear
- 93C10 Nonlinear
- 93C15 Systems governed by ordinary differential equations
- 93C20 Systems governed by partial differential equations
- 93C22 Systems governed by integral equations

- 93C25 Systems in abstract spaces
- 93C30 Systems governed by functional relations other than differential or integral equations
- 93C40 Adaptive
- 93C45 Time-invariant
- 93C50 Time-dependent
- 93C55 Discrete-time
- 93C60 Continuous-time
- 93C99 None of the above, but in this section
- 93Dxx Stability**
 - 93D05 Ljapunov stability
 - 93D10 Popov-type stability of feedback systems
 - 93D15 Stabilization of systems by feedback
 - 93D99 None of the above, but in this section
- 93Exx Stochastic systems and control**
 - 93E05 Stochastic games, stochastic differential games
 - 93E10 Estimation problems (filtering, prediction, data smoothing, system identification)
 - 93E15 Stochastic stability
 - 93E20 Optimal stochastic control (continuous parameter)

- 93E25 Computational methods
- 93E99 None of the above, but in this section

94-XX INFORMATION AND COMMUNICATION, CIRCUITS, AUTOMATA [For papers in pattern recognition, linguistics and formal languages, see 68A30, 68A45.]

- 94-01 Elementary exposition (collegiate level)
- 94-02 Advanced exposition (research surveys, etc.)
- 94-03 Historical
- 94-04 Explicit machine computation and programs (not the theory of computation or programming)
- 94-06 Collections of papers; proceedings of conferences
- 94A05 Communication theory [See also 60G35.]
- 94A10 Coding theory
- 94A15 Information theory [See also 62B10.]
- 94A20 Circuits, networks; applications of graph theory and Boolean algebra
- 94A25 Sequential machines
- 94A30 Automata, general [See also 02F10, 18B20, 68A25.]
- 94A35 Probabilistic automata
- 94A99 Miscellaneous topics

